Technical Service Bulletin

91 MMI3G+ Audi connect only reaches 2G service - Telephone module replacement instructions for A6 & A7

91 16 69 2039515/7 September 7, 2016. Supersedes Technical Service Bulletin Group 91 number 16-30 dated February 25, 2016 for reasons listed below.

Model(s)	Year	VIN Range	Vehicle-Specific Equipment
A6, A7	2011-2013	All	Audi connect

ondition

REVISION HISTORY		
Revision	**Date**	**Purpose**
7	-	Revised *Service* (Updated ZUG update number)
6	2/25/2016	Revised *Service* (Removed affected cities; added information about notification letter) Revised *Warranty* (Changed labor code for SVM update)
5	10/16/2015	Revised *Condition* (Updated affected areas) Revised *Service* (Added note about updated part number and moved driver script after ZUG update)

- The customer complains that the Audi connect online service in their 2012-2013 A6 or A7 vehicle only reaches 2G service.
- The customer has received a letter from T-Mobile and/or Audi of America regarding the issue.
- The VIN on the letter matches the VIN on the vehicle that is being serviced. The vehicle can be within or outside of the New Vehicle Limited Warranty.

Tip: This bulletin applies only to model year 2012-2013 A6 and A7 vehicles. For other models, see TSB 2039476. This bulletin does not apply to model year 2014 or newer. Starting with model year 2014, the new telephone module was installed in production.

Technical Background

Recently, T-Mobile (the service provider for Audi connect) has repurposed some of the GSM spectrum (3G on 2100Mhz band) to maximize 4G LTE coverage in certain metropolitan areas.
Devices that do not support 3G service on the 1900MHZ band (including MMI main units of model year 2012-2013 A6 and A7 vehicles) will only receive 2G service when the switch is completed.

Production Solution

A telephone module that supports 3G service on the 1900MHZ band was installed beginning with model year 2014 vehicles. No repairs are necessary for model year 2014 vehicles and later.

Service

The telephone module can be replaced with an upgraded module that supports the additional 3G GSM spectrum. In some cases, only an MMI software update is required.

Tip: The upgraded telephone module will only allow 3G to be received again in markets where T-Mobile has repurposed the GSM spectrum for 4G LTE. It will not allow Audi connect to receive 4G LTE, which is not possible with the MMI3G+ hardware.

Before starting the repair:

- Check the part number label of the currently-installed MMI main unit. If the MMI main unit was replaced due to a GPS location issue, the updated part already contains the newer UMTS Telephone Module. The updated part number is 4G0035746E, 4G0035746F, 4G0035746G, or 4G0035746H. If the part number suffix matches, the hardware repair is not required. If the customer is allowed to switch to AT&T and already has the updated part, an MMI software update may be required. If so, skip to the *Software updates* section below.
- Review the *Required Parts and Tools* section of this bulletin.
- Obtain the telephone module retrofit kit listed in the *Required Parts and Tools* section of this bulletin (if needed).
- Obtain the ZUG K0942 update on SD card listed in the *Required Parts and Tools* section of this bulletin.
- If the hardware module is being swapped:
  - Obtain the telephone driver script from ServiceNet (*ServiceNet>>AUDI>>Technician References>>Audi MMI Scripts*). The file name is **MMI3GP_UMTS_Driver_Script.zip**. Extract the three files to a separate SD card. Ensure that all three files are extracted to the root location on the SD card (do not store the files in a folder on the SD card and do not copy the zip to the SD card; files must be extracted).
  - Verify that the VAS6613 ESD work surface contains three grounding straps. The repair cannot be completed without all three grounding straps, including the ESD mat.
  - Watch the “91 MMI3G+ Telephone Module Replacement Instructions for A6 & A7” video at
  - https://audi-external.kzoplatform.com/swf/player/301 (Figure 1). (See TSB 2039206 for more information about viewing

Figure 1. *QR code for viewing the video with a QR code reader on phones and tablets. Alternatively, the video can be accessed through computer internet browsers at the link provided in this bulletin.*

videos.)

Repair procedure if updated hardware is required:

Note:

This exchange of the telephone module should only be performed in a clean environment due to sensitive electronics. The repair should not be performed in a workshop environment.

1. Remove the MMI main unit from the vehicle according to the instructions in the Elsa Repair Manual at: *Electrical System>>Communication>>91 Communication>>Infotainment System>>Information Electronics Control Module 1 J794, Removing and Installing*.

2. Prepare for the ESD work surface by cleaning the work area of all loose debris and then drying the area with a towel. Doing so ensures that no debris will be rolled into the mat when it is rolled up after use, which could cause long-term damage to the ESD work surface.

3. Place the ESD anti-static mat onto the surface. Ensure that all three grounding straps are securely strapped to the ESD mat.

4. Ground the ESD mat by plugging the 110V grounding strap into a wall socket or power strip (Figure 2). If a power strip is used, it must be plugged into a grounded wall outlet. (See attached user instructions for VAS6613 titled “VAS6613 ESD Workspace Guide.pdf”.)

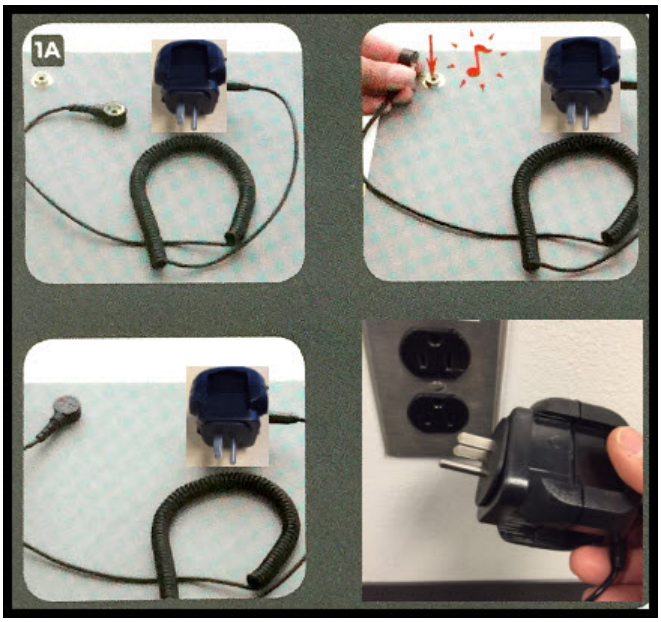

Figure 2. *VAS6613 ESD work surface grounding plug.*

5. Ground yourself by placing the elastic strap around your wrist. Make sure it is securely touching your skin. It cannot be loose-fitting or over your shirt cuff (Figure 3).

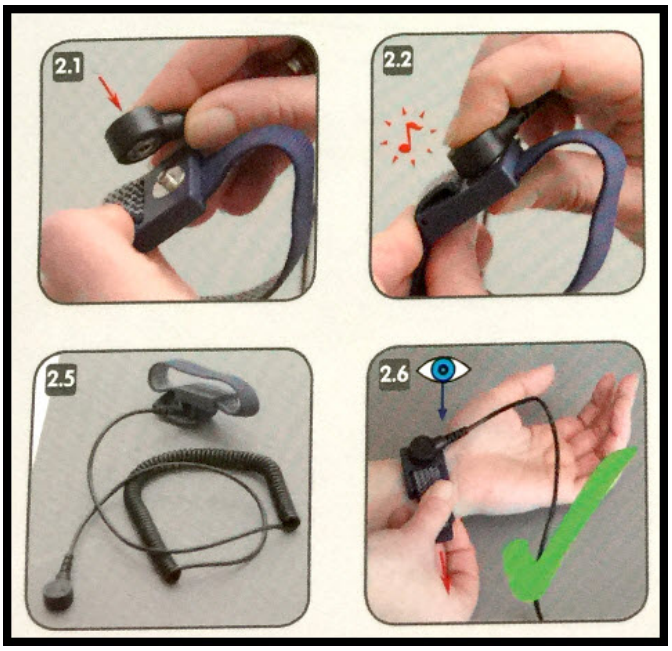

Figure 3. *VAS6613 ESD work surface grounding wrist strap.*

6. Ground the MMI main unit by placing an alligator clip on the back, ensuring that it makes contact with the metal housing of the main unit. The most secure location is at the bottom of the metal bracket (Figure 4).

   A foam block can be used as a spacer under the main unit to keep the grounding strap connected (Figure 5).

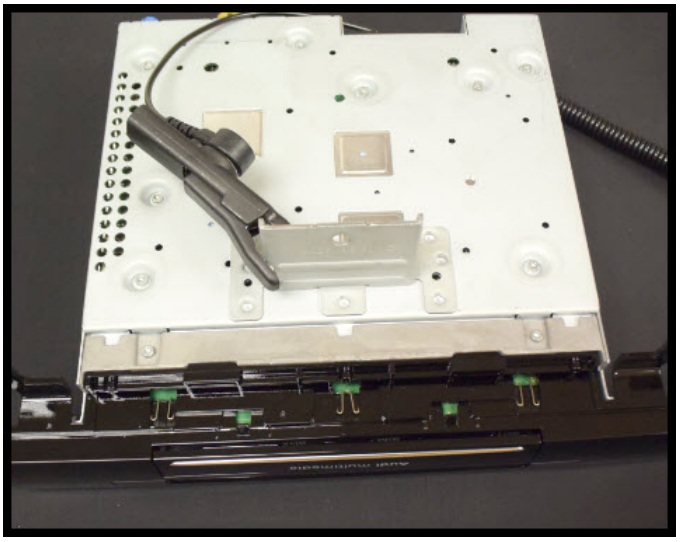

Figure 4. *VAS6613 ESD work surface grounding device clip.*

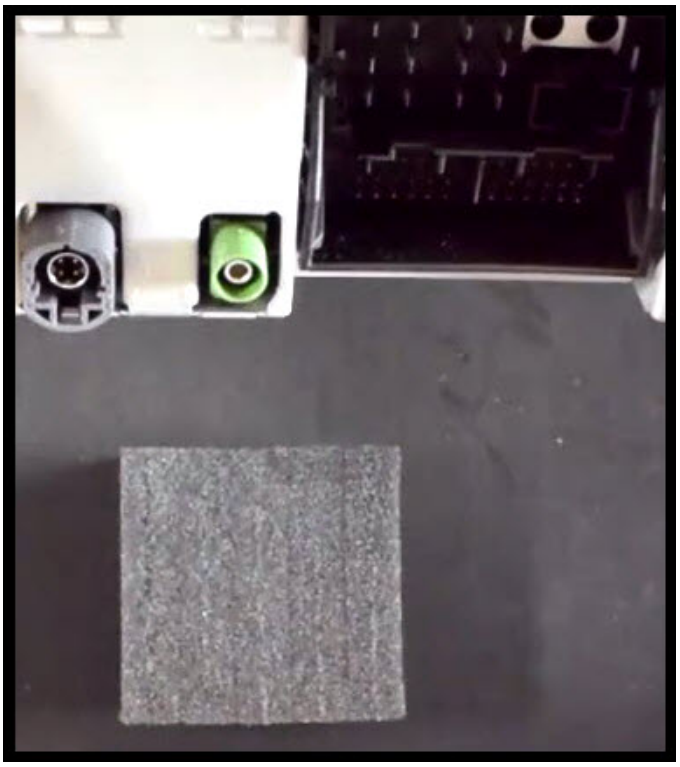

Figure 5. *Foam block used as a spacer under the main unit.*

Warning:

Your wrist, the ESD mat, and the main unit must remain grounded during the entire process.

7. Start by touching the screw driver to the ESD mat to discharge any static that may be built up in the tool. Next, remove the five screws that are holding the MMI top cover in place. The two screws near the faceplate (Figure 6, green arrows) are longer than the others, have thread lock on them, and may require extra effort to remove. Keep these screws separated from the others at all times.

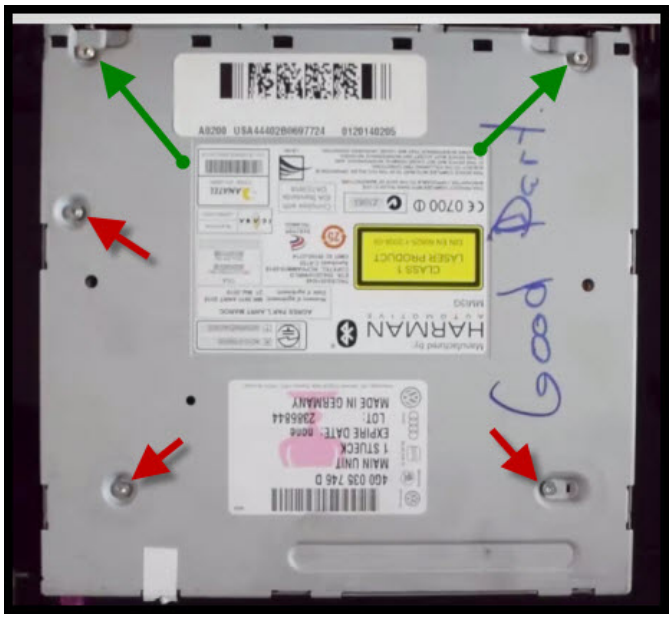

Figure 6. *MMI main unit with screw locations for top cover.*

8. Break the white warranty seal on the back of the main unit (Figure 7).

Figure 7. *Break the white warranty seal.*

9. Using a flat head screw driver, your fingers or a plastic wedge trim tool, remove the top cover by prying it from the back of the cover at the location seen in Figure 8. If a flat head screw driver is used then touch the tool to the ESD mat to discharge the tool prior to touching the main unit.

   The top cover of the main unit has four metal tabs that are slotted into the plastic front face plate (Figure 9). Slightly lift on the rear of the cover and pull back on the cover until the metal tabs are released. Lift up on the cover and pull it away from the face plate at the same time to prevent bending the top cover's metal tabs (Figure 10). If the metal tabs bend during this process, straighten them with a pair of pliers.

   Note:

   Removal of the top cover is only allowed once. This ensures that system components are not contaminated with metal screw filings or other debris that can occur after multiple attempts of opening the main unit.

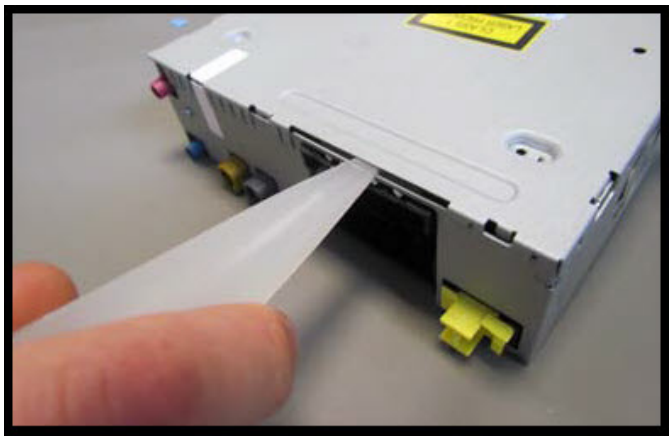

Figure 8. *Pry to cover off using plastic trim wedge tool.*

Figure 9. *Top cover metal tabs indicated by the red arrows.*

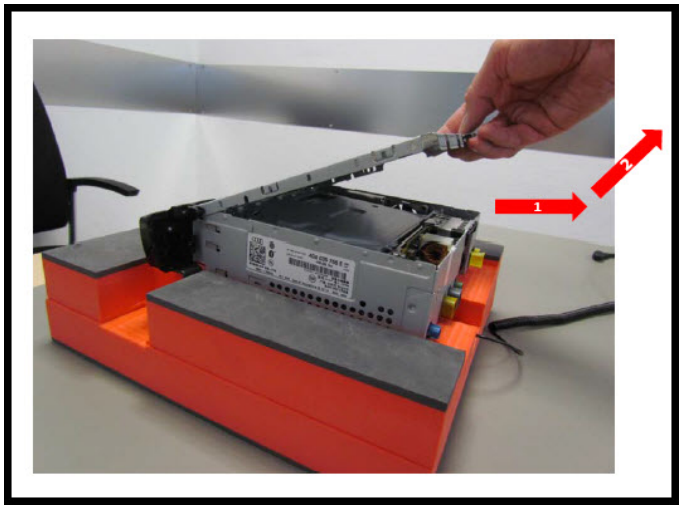

Figure 10. *Pull up and back to prevent damaging the faceplate slots (Note: the orange/black holder is not required).*

Note:

Do not flip the main unit over at this point. The CD drive, which was held in place by the top cover screws, is no longer secured. If the CD drive moves significantly, the ribbon cable can detach from the circuit board and disable the CD drive's functionality (Figure 11).

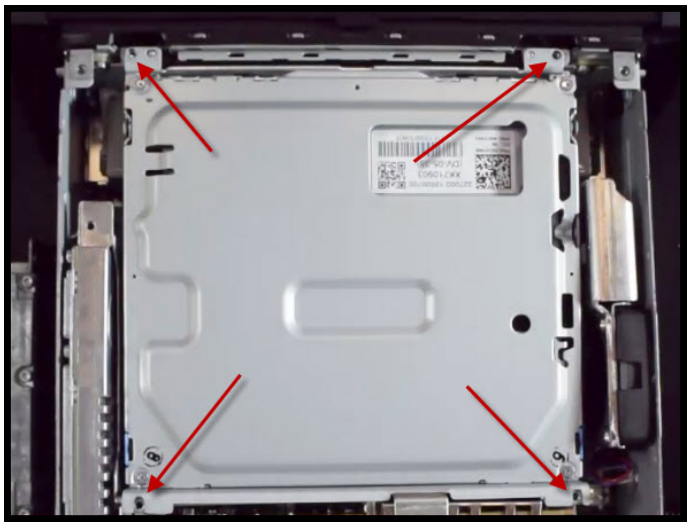

Figure 11. *CD drive mounting points are now free.*

10. On the back of the main unit, remove the retaining screw that holds the telephone module in place (Figure 12).

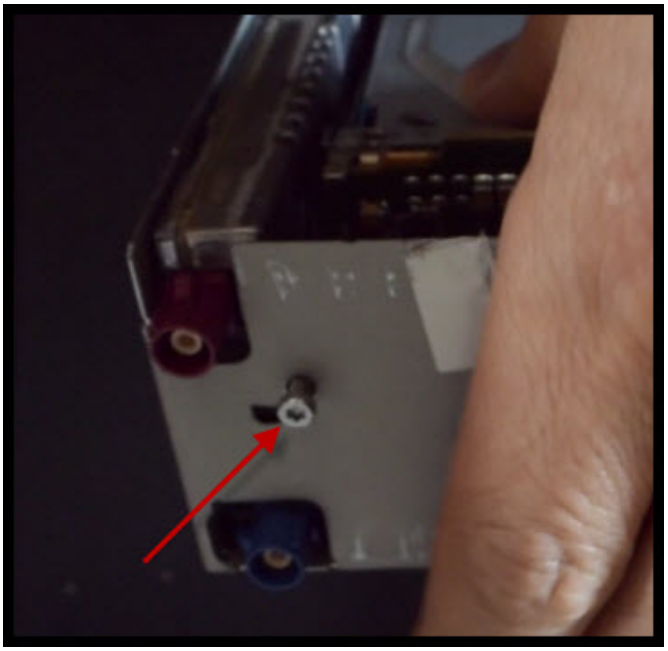

Figure 12. *Telephone module retaining screw indicated by the red arrow.*

11. Carefully lift up the telephone module, using both ends as points of contact when pulling up (Figure 13). The module is held in place with a computer socket-type attachment and will release when enough force is used.

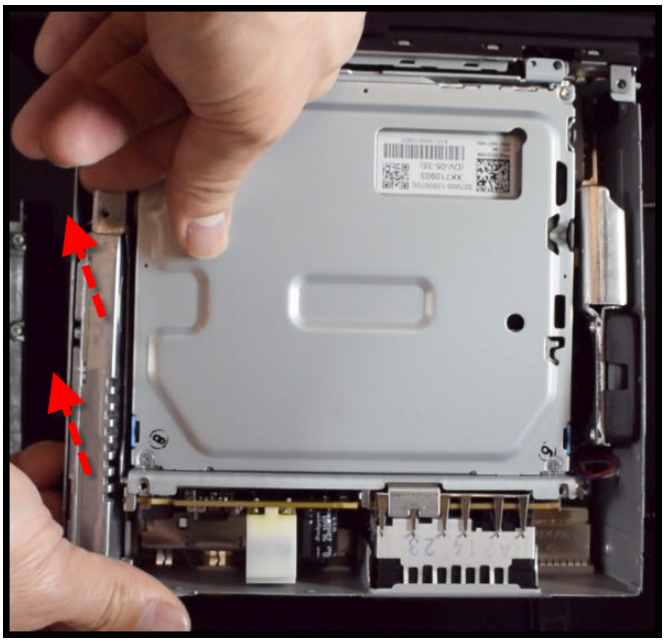

Figure 13. *Lift up on both ends of the telephone module as indicated by the red arrows.*

12. Before proceeding, write down the serial number of the new replacement UMTS telephone module (Figure 14).

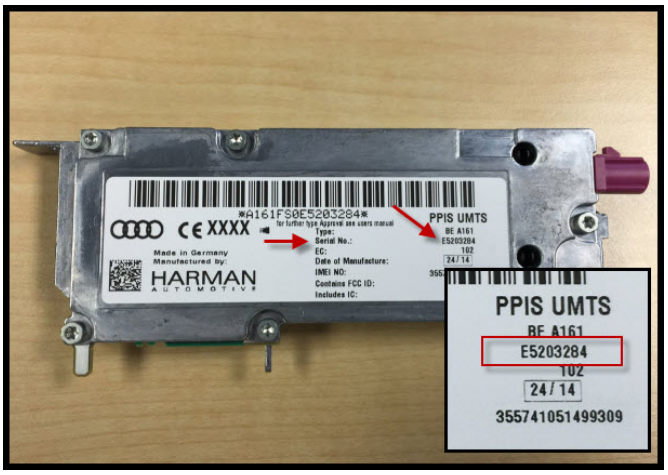

Figure 14. *Serial number of the PPIS UMTS telephone module indicated by the red arrows and red box.*

13. Place the new UMTS telephone module into the socket, making sure it is level before snapping it into place. Use both ends of the telephone module when pressing it into place. Do not press down using the purple FAKRA connector (Figure 15).

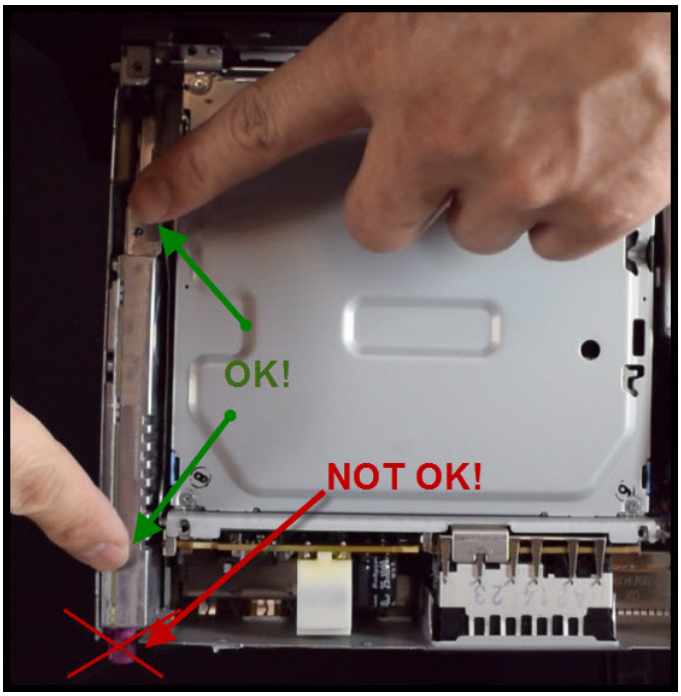

Figure 15. *Do not press down using the purple FAKRA connector.*

14. Re-secure the telephone module retaining screw into the back of the MMI main unit.

15. Place the main unit top cover back into the MMI main unit housing.

16. Re-secure all five top cover screws.

Note:

Ensure that each screw is in its original location. Using one of the longer screws in the wrong location can damage the MMI. If the CD drive is not aligned properly it can cause difficulty when applying torque to the top cover screws.

17. Place the new warranty seal from the retrofit kit next to the original warranty seal (Figure 14).

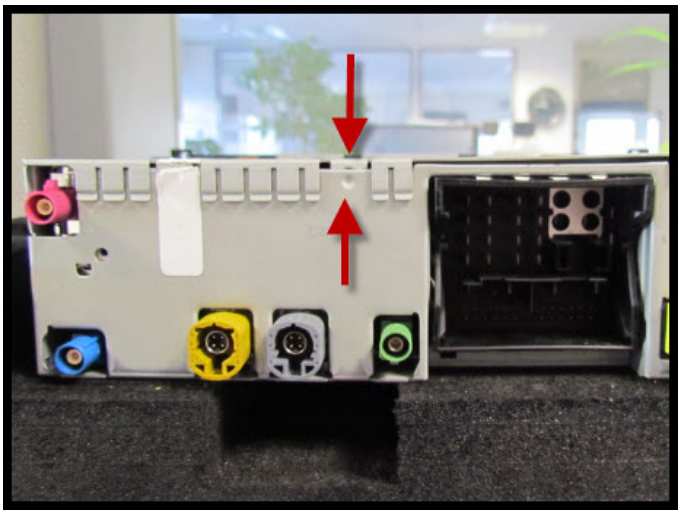

Figure 14. *Place the new warranty seal over the location indicated by the red arrows.*

18. Place the repair label on the top of the main unit cover. Do not cover any part number label with the repair label and do not cover the yellow laser warning (Figure 15). Fill out all fields on the repair label.

    Note:

    Do not cover the yellow laser warning label. The repair label may need to be placed on sideways due to space limitations

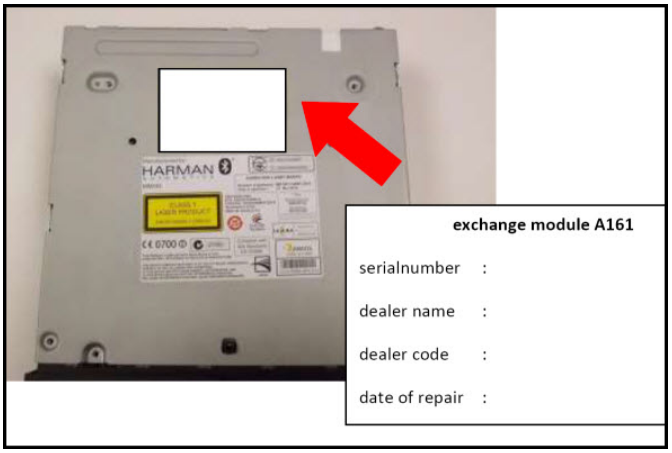

Figure 15. *The white area indicates the suggested location for the repair label on the top cover of the main unit. Do not cover any existing part number labels or the laser warning.*

19. Reinstall the MMI main unit in the vehicle and proceed to *Software updates*.

Software updates (required for all repairs):

1. Turn the vehicle ignition on. When the system is fully initialized, perform TSB 2028141 to update the ZUG software to K0942, using the required software update SD card listed in the *Required Parts and Tools* section of this bulletin.

   Tip: Ensure that the SVM portion of the update is completed successfully without errors. If any

issues arise with SVM, contact TAC.

2. Obtain the telephone driver script from ServiceNet. The file name is **MMI3GP_UMTS_Driver_Script.zip**, and it is located at *ServiceNet>>AUDI>>Technician References>>Audi MMI Scripts*.

3. Copy the telephone driver script to a PC and extract the three files to the root of an SD card. (The three files are labeled “reboot”, “graphics”, and “copie_scr.sh”).

4. Turn the vehicle ignition on and allow the MMI main unit to fully initialize. It may take up to three minutes for the main unit to fully initialize due to the hardware replacement. All options will be white in the Telephone menu of the MMI when the system has fully initialized.

5. Insert the SD card into the left SD card slot of the main unit. Once the card is inserted, the system will automatically start the update script. When the script completes, a prompt or message will show on the screen indicating that the driver update is complete.

   Tip: If the message does not show after one minute, eject and reinsert the SD card back into the main unit. If the driver script is not allowed to complete, the MMI main unit will not be able to recognize any SIM card. Contact TAC if there are any issues with this step.

6. Remove the SD card and perform a three-finger reset on the MMI main unit. (See attachment “MMI_SHORTCUT_KEYS.PDF”, which explains which keys to push for the reset for each Audi model.)

7. Once the system is fully initialized, insert the customer’s SIM card and verify that the system can receive a signal.

   Tip: If, after the ZUG software update the MMI main unit cannot recognize any SIM cards, repeat steps 4-7. Follow the attached *SIM Card Troubleshooting Guide* if the driver script has already been executed correctly. If the system still does not recognize any SIM cards, contact TAC.

8. Perform a quick verification test to ensure that all functions of the MMI are operating correctly:
   - Place the customer’s SIM card into the SIM card slot. Ensure that 3G reception is obtained and test data downloads by connecting a device to the vehicle’s Wi-Fi hotspot.
   - Place an audio CD into the CD drive and check for normal playback.
   - Check that Bluetooth pairing is working
   - Verify that the AMI system is working
   - Check AM/FM/SAT radio operation outside the shop
   - Check that Navigation is receiving more four or more satellites (*Navigation>>Route* then scroll up to top, then *Select* and scroll up to top again to obtain the number of satellites being received)

Warranty

Claim Type:	1SP		
Service Number:	9170		
Damage Code:	0040		
Labor Operations:	**Only if MMI software update is required:**		
	Update MMI software and perform SVM	9170 0299	120 TU
	If hardware replacement and software update are required:		
	UMTS telephone module retrofit	9170 1999	165 TU
	GFF	0150 0000	Time stated on diagnostic protocol (Max 40 TU)
Diagnostic Time:	Road test prior to service procedure	No allowance	0 TU
	Road test after service procedure	No allowance	0 TU
	Technical diagnosis at dealer's discretion (Refer to Section 2.2.1.2 and Audi Warranty Online for DADP allowance details)		
Claim Comment:	As per TSB #2039515/7		

All warranty claims submitted for payment must be in accordance with the *Audi Warranty Policies and Procedures Manual*. Claims are subject to review or audit by Audi Warranty.

Required Parts and Tools

Part Number	Part Description	Quantity
8T0 051 431	PPIS UMTS telephone module for MMI3G+	1
VAS6613	ESD work surface	1
T10057	Radio removal tools	1
T40056A	Torx T8 screwdriver	1
3409	Trim removal wedge	1
	Blank SD card for driver script (<32GB)	1
	Foam block, block of wood, or a large book	1
8R0 906 961 ES	A8/A6/A7 K0942 MMI UPDATE SD	1

Additional Information

All parts and service references provided in this TSB (2039515) are subject to change and/or removal. Always check with your Parts Department and service manuals for the latest information.