

X431Pro3 Diagnosis 2008 Audi Q7 (USA) Tire Pressure Sensor Fault Case

Product Model	Date	No.
X431Pro series	20160113	—

Vehicle Coverage:

- Audi Q7, 2008, VIN=WAUAV54L98D0*****, instrument panel TPMS MIL alarms

Procedure:

- 1) Choose Audi V27.50 or a later version.
- 2) Choose System Selection.
- 3) Choose 65 Tyre Pressure Monitoring.
- 4) Choose Read DTCs. The DTC "01521 Tire pressure sensor" is obtained. See Figure 1.

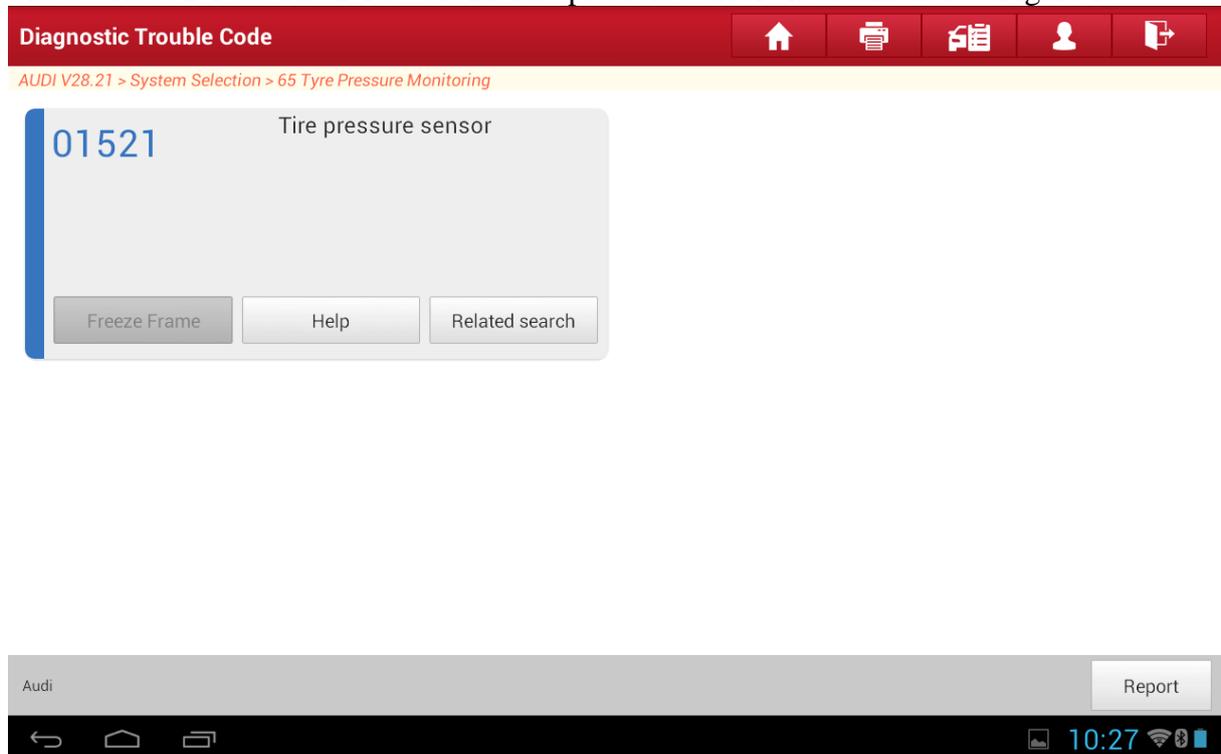


Figure 1

5) To locate the faulty tire pressure sensor, read data streams for the FL, FR, RL, and RR tire pressure sensors. See Figure 2, Figure 3, Figure 4, and Figure 5.

Data Stream			
AUDI V28.21 > System Selection > 65 Tyre Pressure Monitoring			
Name	Value	Unit	
Wheel Sensor 1 Status III	003		
003-1,Transmitter Status	Rad1,3369810561		

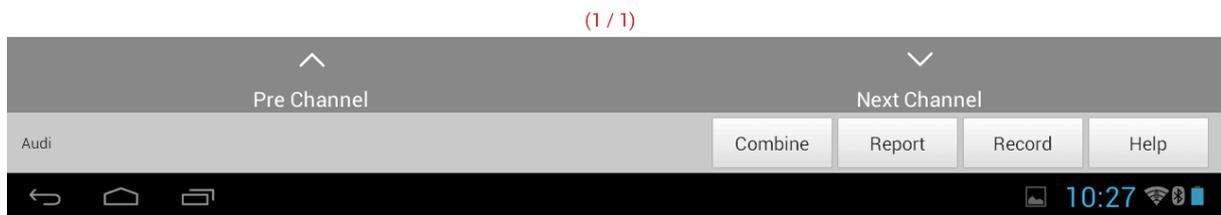


Figure 2 FL tire status

Data Stream			
AUDI V28.21 > System Selection > 65 Tyre Pressure Monitoring			
Name	Value	Unit	
Wheel Sensor 2 Status III	006		
006-1,Transmitter Status	Rad2,3428569601		

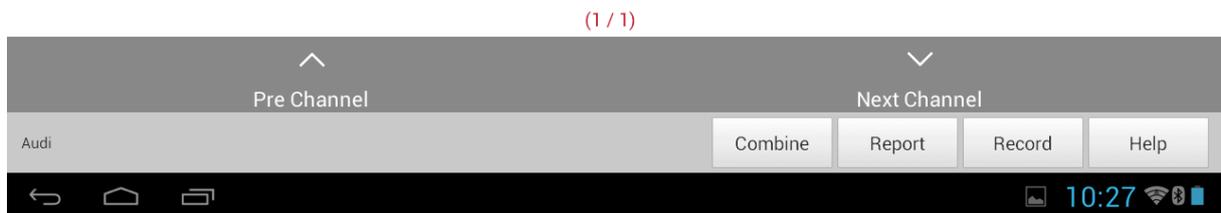


Figure 3 FR tire status

Data Stream			
AUDI V28.21 > System Selection > 65 Tyre Pressure Monitoring			
Name	Value	Unit	
Wheel Sensor 3 Status III	009		
009-1,Transmitter Status	Rad3,3369796142		

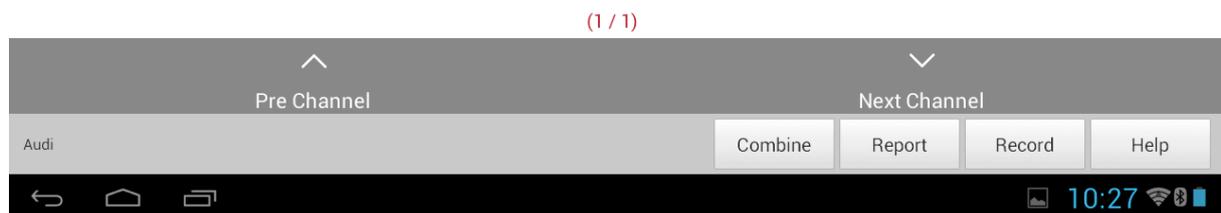


Figure 4 RL tire status

Data Stream			
AUDI V28.21 > System Selection > 65 Tyre Pressure Monitoring			
Name	Value	Unit	
Wheel Sensor 4 Status III	012		
012-1,Transmitter Status	Rad4,3423656131		

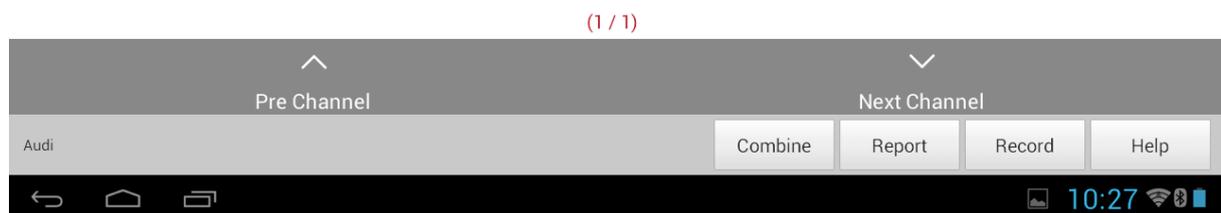


Figure 5 RR tire status

6) Analyze the following data streams:

- 003-1, (FL wheel status III) wheel sensor position: 2.081.773.353 Status 00h
- 006-1, (FR wheel status III) wheel sensor position: 2.081.770.983 Status 00h
- 009-1, (RL wheel status III) wheel sensor position: 2.081.771.502 Status 00h
- 012-1, (RR wheel status III) wheel sensor position: 0.000.000.000 Status 00h

- 7) Based on the data stream analysis, the RR tire pressure sensor is determined to be faulty because there is no position digit information for it. Audi Q7 tire pressure sensor has two frequencies (315Hz and 433Hz). The frequency of this Audi Q7 tire pressure sensor is 315Hz. When replacing the tire pressure sensor, pay attention to its frequency.
- 8) Compared with the Audi Q7 (China) tire pressure monitoring system (see Figure 6), the structure of the US regulation Audi Q7 tire pressure monitoring system eliminates the tire pressure monitoring system transmitter G431.....G434, and everything else is the same. The software of tire pressure monitoring system control unit J502 has been modified, so the part number has also changed.

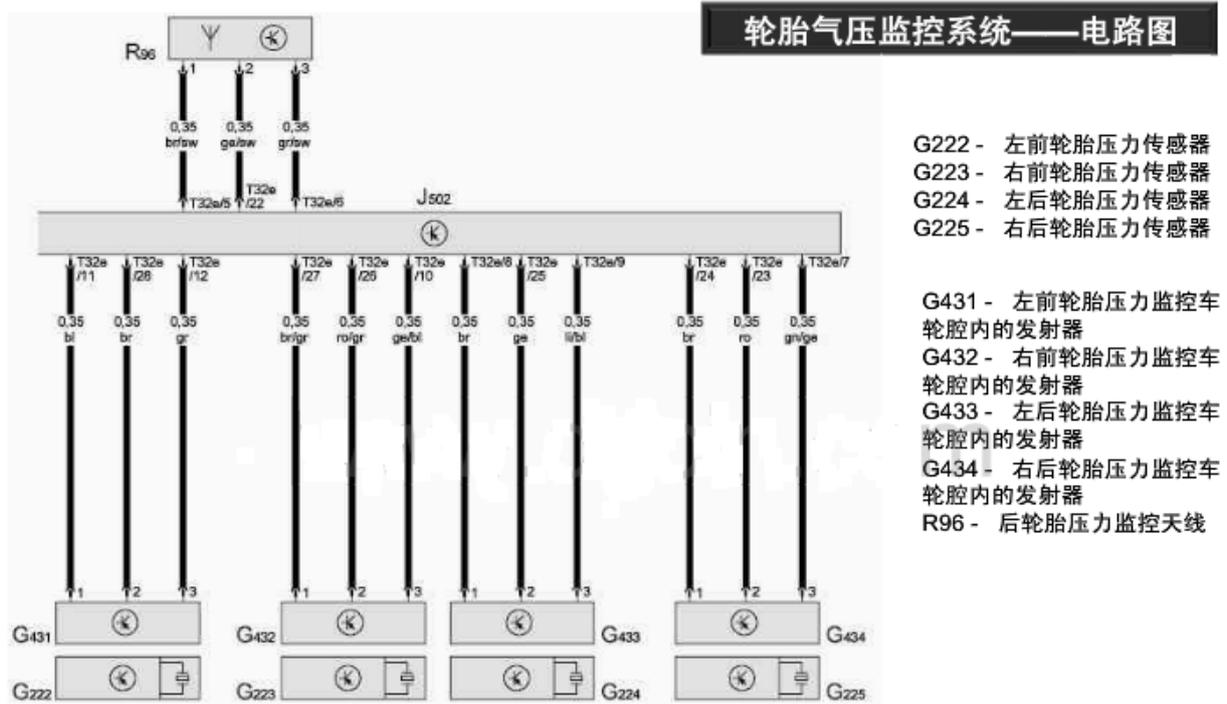


Figure 6 Audi Q7 (China) tire pressure monitoring system

- 9) According to the working principle, the tire pressure sensors G222.....G225 send tire pressure and temperature signals containing their respective ID information, which are received by the common antenna R96 and transmitted to the control unit via the LIN bus. Instead of identifying the tire position, the control unit simply adapts the sensor to the car. The method is to confirm "Change tire" on the MMI and drive for a period of time (no more than 20 minutes) with the speed above 40km/h.
- 10) After one RR tire pressure sensor is replaced for the car and MMI matching succeeds, perform a 30-minute road test. The TPMS MIL is no longer on, indicating that the fault is rectified.

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