VOLVO CAR
SERVICE AND PARTS BUSINESS

Technical Journal

TITLE:

RDAR replacement (Satellite radio tuner), Battery drain

REF NO:	ISSUING DEPARTMENT:	CAR MARKET:	
TJ 26188.1.10	Technical Service	United States and Canada	
PARTNER:		ISSUE DATE:	STATUS DATE:
3 US 7510 Volvo Car USA		2017-01-31	2017-02-07
FUNC GROUP:	FUNC DESC:	Page 1 of 13	
3920	Radio, complete		

"Right first time in Time"

Attachment

File Name	File Size
Checking_Standby_Current.pdf	0.0817 MB
P1_wiring.pdf	0.0328 MB
P3_wiring.pdf	0.0358 MB
RDAR_Connections.png	0.5945 MB
RDAR_DTC.PNG	0.0278 MB
Sirius_ID.PNG	0.2888 MB

Vehicle Type

Type	Eng	Eng Desc	Sales	Body	Gear	Steer	Model Year	Plant	Chassis range	Struc Week Range
124							2008-2012		-	0-0
134							2011-2012		-	0-0
135							2008-2010		-	0-0
136							2008-2012		-	0-0
156							2010-2012		-	0-0
275							2008-2012		-	0-0
533							2008-2012		-	0-0
542							2008-2012		-	0-0
544							2008-2012		-	0-0
545							2008-2012		-	0-0

CSC Customer Symptom Codes

Code	Description
LM	Battery/Dead battery
LN	Battery/Weak or low electrical power
FC	Audio other/Other audio problems
DP	Radio/Does not work
2P	Satellite radio/Does not work

VST Operation Number

DTC Diagnostic Trouble Codes

Rows beginning with * are modified
Note! If using a printed copy of this Technical Journal, first check for the latest online version.

Text

DESCRIPTION:
*Sirius account number has been updated
*TJ re-formatted to new TIE template

RDAR = Remote Digital Audio Receiver (Satellite radio tuner)
VIDA = Volvo Information and Diagnostics for Aftersales
ESN = Electronic Serial Number (same as Sirius ID)

This TJ replaces TJ 25950 and previous versions of TJ 26188.

For repair order dates on or after February 4th, 2013, RDAR units are removed from the prior approval process. It is no longer necessary to submit a Prior Approval report. However, all warranty claims for RDAR replacement will be reviewed.

SERVICE:
There is no need to replace the RDAR due to:

1. No function, 'Locked' condition, or Acquiring Signal message:

- Not possible to select SAT1 or SAT2 as an audio source.
- SAT1 or SAT2 may be visible, but there is no reaction from the system when selecting them.
- Acquiring Signal message is constantly displayed.
- It will not be possible to access any Sirius menu items.
- This 'Locked' condition in combination with other factors may result in a higher than normal standby-current consumption. DTC 0008 or U300098 (overheated) may be set.

Analysis of units returned to the supplier shows that almost all units could have been recovered.

Software is now available to prevent this condition from reoccuring.

1A. To recover P1 and XC90(P2) units:

- Remove the fuse or the power/ground connector to the RDAR and re-install after 10 seconds.
- Perform an RDAR Upgrade with VIDA. This will recover the unit and prevent the condition from reoccuring.
- It will now be possible to select satellite radio as an audio source.
  An "Updating Channel List" message will be displayed.
- If there is no active subscription, the procedure is complete. Channel 184 may become visible or the "Updating Channel List" message may remain as long as there is no active subscription.

Both conditions are normal.

- If there *is* an active subscription, the unit should be refreshed by entering the 12 digit Sirius ID and clicking on Send Activation Request at https://care.siriusxm.com/retailrefresh_view.action while the vehicle is running, audio system on & a clear view of the sky.

The web page will display the message "Activation Request Sent". After a few minutes, the vehicle will receive the signal, the channel list will be updated and audio will be available on the channels included in the subscription. If the web page displays the message "Please enter a valid ESN" even though the correct ESN was entered, there is no active subscription.

Note: In addition to the 12 digit Sirius ID being on the unit itself, it can also be found in the Warranty Inquiry screen for some vehicles where the original unit has not been replaced previously.

1B. To recover P3 units:

- It is normally not possible to recover the unit using VIDA on P3 cars.
- Lift the luggage compartment floor, unplug the power/ground connector to the RDAR and plug it back in after 10 seconds.
- Copy the 12 digit Sirius ID number printed on the label.
- Have the vehicle running, audio system on & a clear view of the sky.
- Go to https://care.siriusxm.com/retailrefresh_view.action, enter the ESN and choose "Send Activation Request".

The web page will display the message "Activation Request Sent".

After a few minutes, the vehicle will receive the signal and SAT1 and SAT2 will be selectable. It will be possible to tune to channel 184. There may or may not be audio on channel 184- this is dependent on the hardware variant and is normal. Any abnormal current consumption issue caused by the RDAR will be solved.

If the web page displays the message "Please enter a valid ESN" even though the correct ESN was entered, this method will not work for the particular ESN; proceed to 1C.

Once the unit has been recovered, perform an *RDAR Upgrade* which will prevent the condition from reoccurring.

If they like, the customer can call Sirius and purchase a valid subscription as usual.

1C. Only necessary if 1B does not recover the unit:

- Call the Sirius/XM Dealer Support (800) 852-9696, Press option "2"

To minimize confusion, use these exact instructions when speaking to the agent:

- State that you would like to "add a receiver to an engineering account and send an Engineering Restore signal".
- You will be asked for the 12 digit Sirius ID number.
- * You will be asked for the account number: **2102914098**
- You may be asked for an address: 1 Volvo Drive, Rockleigh NJ 07647
- You may be asked to tune to channel 184. This will not be possible due to the current state of the unit; ask the agent to send the signal anyway.
- The agent should now be able to add the receiver to the account and send the Engineering Restore signal.

If the Sirius agent is unfamiliar with this procedure you may have to assist them.

The exact steps the agent needs to follow are:

1. *Click on the blue plus symbol (+) next to "Overrides".*
2. *Type in "ENG" (in capital letters).*
3. *Click on "Override Promo Code".*
4. *Click "All Audio Packages".*
5. *Scroll down to "Engineering Restore" (It must be exactly "Engineering Restore", nothing else).*
6. *Choose "Next"*

After a few minutes, the vehicle will receive the signal and SAT1 and SAT2 will be selectable.

An "Updating Channel List" message may be displayed or the display may be blank.

Once the unit has been recovered, perform an *RDAR Upgrade* which will prevent the condition from reoccuring. The fault is now repaired; any abnormal current consumption issue caused by the RDAR will be solved.

If they like, the customer can call Sirius and purchase a valid subscription as usual.

2. Specific channels are not available:

This can be caused by the Sirius channel lock settings in the vehicle's menu as described in the owner's manual.

* In addition, SiriusXM occasionally holds "free listening events" during which a limited selection of channels is available for free to customers without a subscription.
Check www.siriusxm.com or call SiriusXM at **1-866-635-5027** to see if there is a free listening event in progress.

3. A total vehicle stand-by current draw of approximately 60 mA which drops to under 25mA after a key cycle. This draw is triggered when the power feed to the RDAR module is interrupted for a short period of time (a few seconds) and then reconnected. This often occurs during the fault tracing process, for example when the battery cable is temporarily disconnected to insert an ammeter, when a fuse is pulled and reinstalled, when the module is unplugged and plugged in again, etc. The draw disappears after a key cycle.

The procedure for checking Stand-By current is found in VIDA:

- Information->Fault Tracing->General Diagnostics and Tests->311 Battery
- A portion of the procedure is attached.

4. An RDAR may need to be replaced:

- If the unit can not be brought online according to the above.
- For an internal DTC that can not be erased.
- * For other confirmed functional issues diagnosed with Technical Helpdesk assistance.

This information is also published in SMB 39-001 and PB 39-001.

5. Confirm that the vehicle is not affected by other known stand-by current issues:

- C70: Battery drain due to convertible roof module (CRM), see TJ 24318
- P3: Too high quiescent current may drain the battery, see TJ 23515

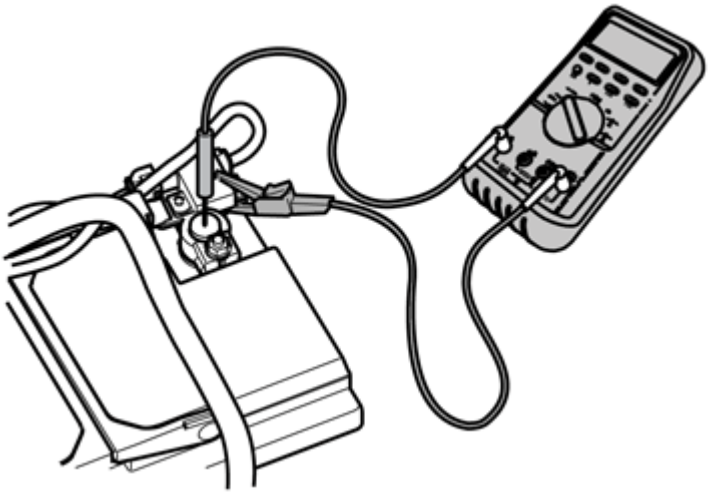
VEHICLE REPORT:
Please submit a Vehicle Report if the remedy in this TJ do not solve the problem. Use concern area "Vehicle Report" and sub concern area "Support Needed", use function group 3900.

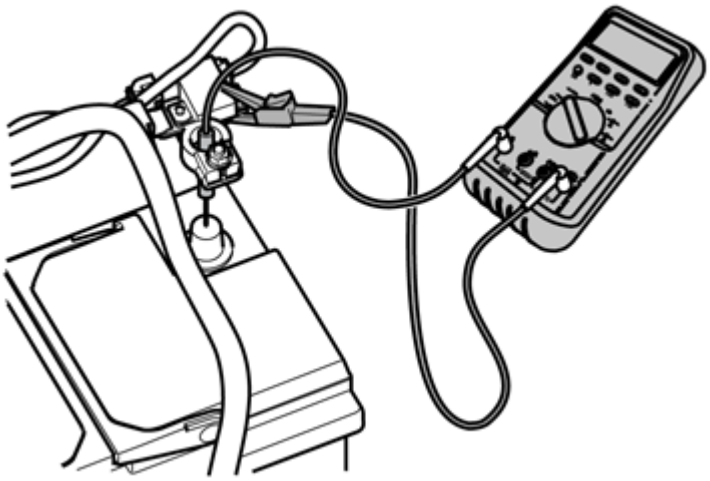
To view TJ attachment continue to the next page. This TJ has six attachments.

XC60, 2012, L.H.D

12/4/2012

PRINT





Checking standby current

Measurement method

When measuring the vehicle's total power consumption, connect the measuring instrument in series with the battery at the battery's negative pole.

Connecting the multimeter at the battery negative pole

Note! To avoid current surges that could damage the measuring instrument when the battery cable is connected, carry out the following. Never connect the measuring instrument if the engine cooling fan is in operation as this can damage the instrument.

Ensure that the multimeter is equipped with a clamp and a probe.

Check that the multimeter is set for current measurement.

Disconnect the nut on the battery cable's negative pole.

Note! Do not lift the battery cable so that the circuit is broken.

Secure the clamp on the negative pole's battery cable terminal.

Note! Check that the connections are installed correctly. If the circuit is broken, the standby current must be re-checked from the beginning

Place the end of the probe on the battery's negative pole.

Slowly lift the battery negative cable without removing the probe.

Stop when the battery negative cable hangs freely without touching the battery or the probe.

Measuring and reading off the total standby current.

Read off the standby current consumption. The total standby current should be less 25 mA.

Note! If the car is equipped with "Volvo on call" and the standby current is too high, wait 5 minutes and measure again. The "Volvo on call" system is active for short periods and then increases the

short-term standby current above the normal value.

Reinstall the battery's negative cable.

Look and listen for unusual vehicle behaviour. Check, for example, if a relay is hot, if it is this can indicate that current is flowing through it.

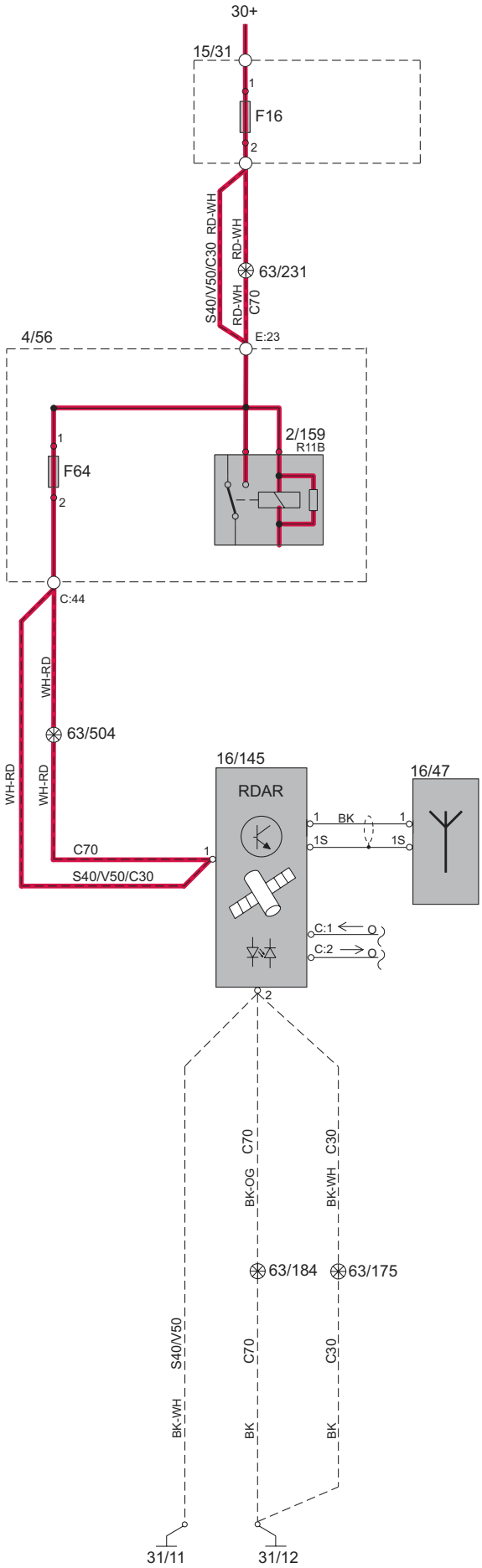
Note! Do not carry out work inside a vehicle equipped with mass movement sensors as the alarm may be triggered.

Check that the CAN network has continued in "sleep mode", see instructions. Checking Can-net's rest status

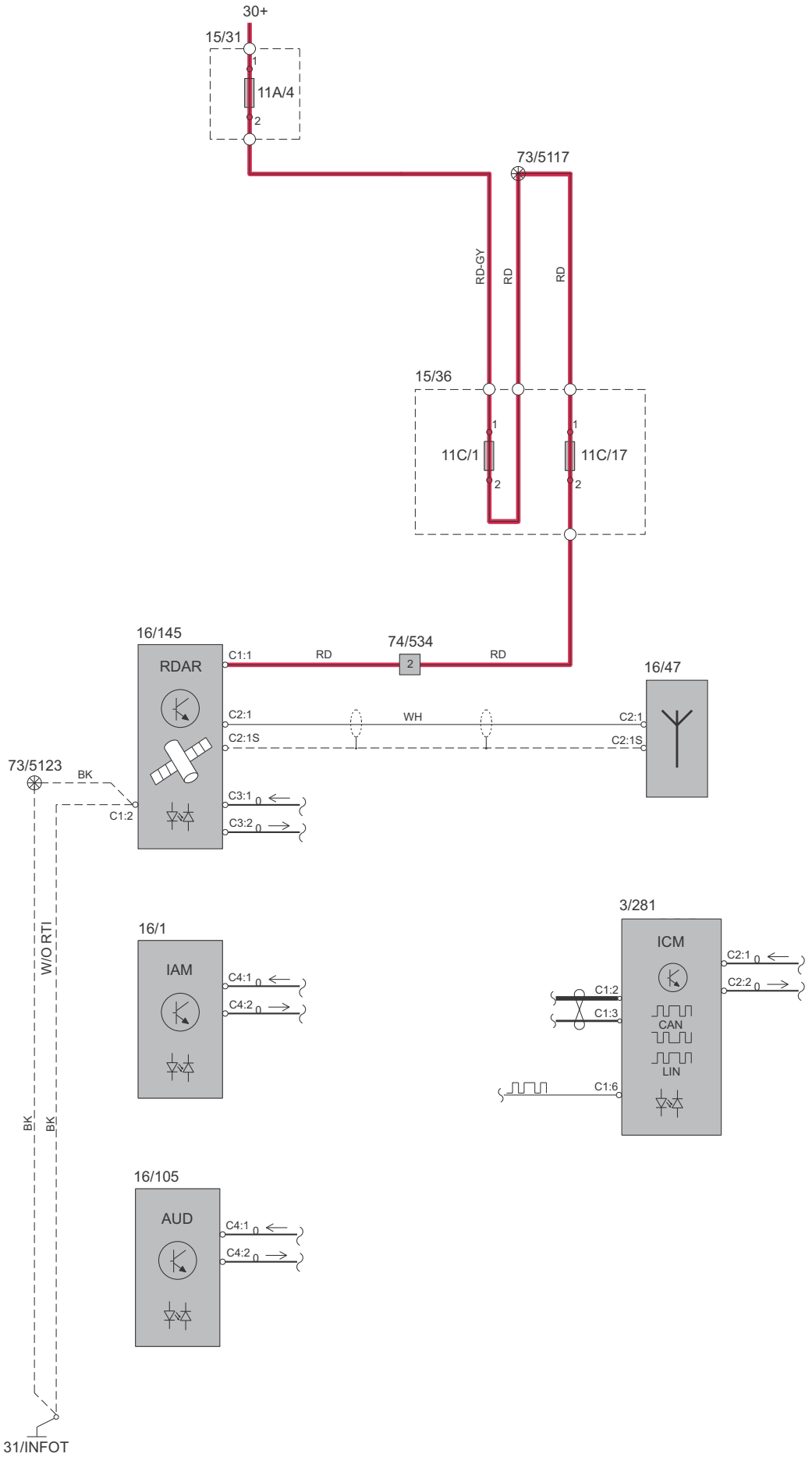
If the standby current is OK and the CAN network is still in "sleep mode", reset the vehicle.

Note! Do not forget to unlock the trunk lid or tailgate and doors.

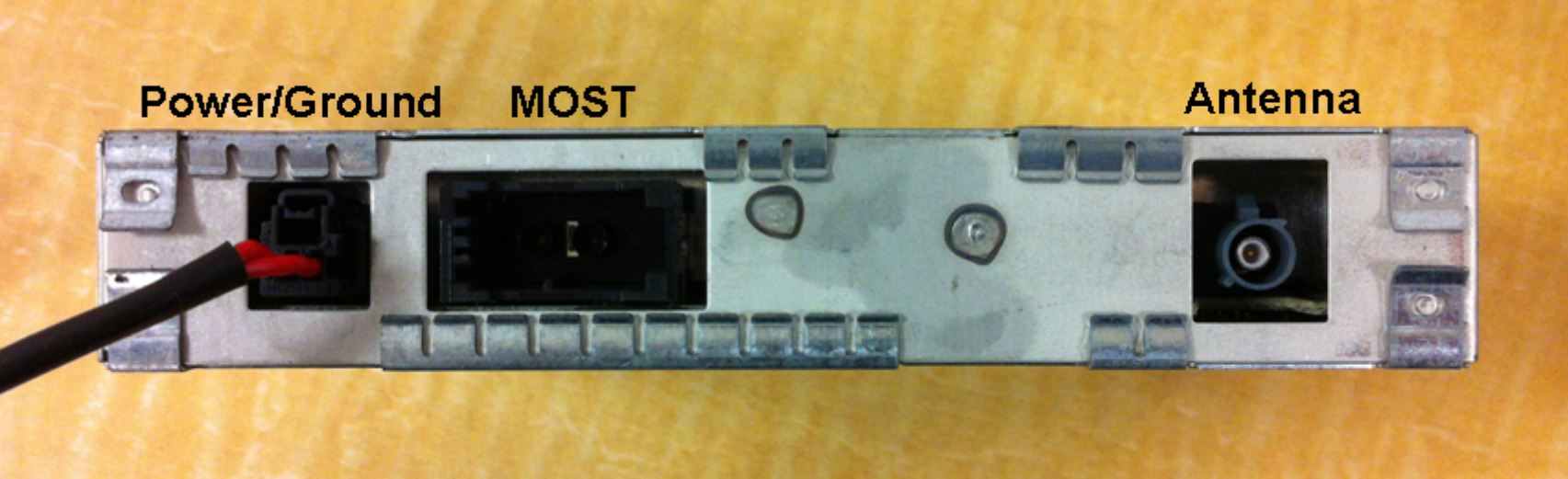
If a fault is detected, fault-trace the relevant system. Otherwise continue fault tracing by successive elimination.


30+
15/31
1
F16
2
S40/V50/C30 RD-WH
RD-WH
63/231
RD-WH
C70
E:23
4/56
1
F64
2
2/159
R11B
C:44
WH-RD
63/504
WH-RD
WH-RD
16/145
RDAR
16/47
1
BK
1
1S
1S
C70
S40/V50/C30
1
C:1
C:2
2
C70
BK-OG
C30
BK-WH
63/184
63/175
S40/V50
BK-WH
C70
BK
C30
BK
31/11
31/12
G030066

Group 39 Other, Accessories
Satellite radio



I01098

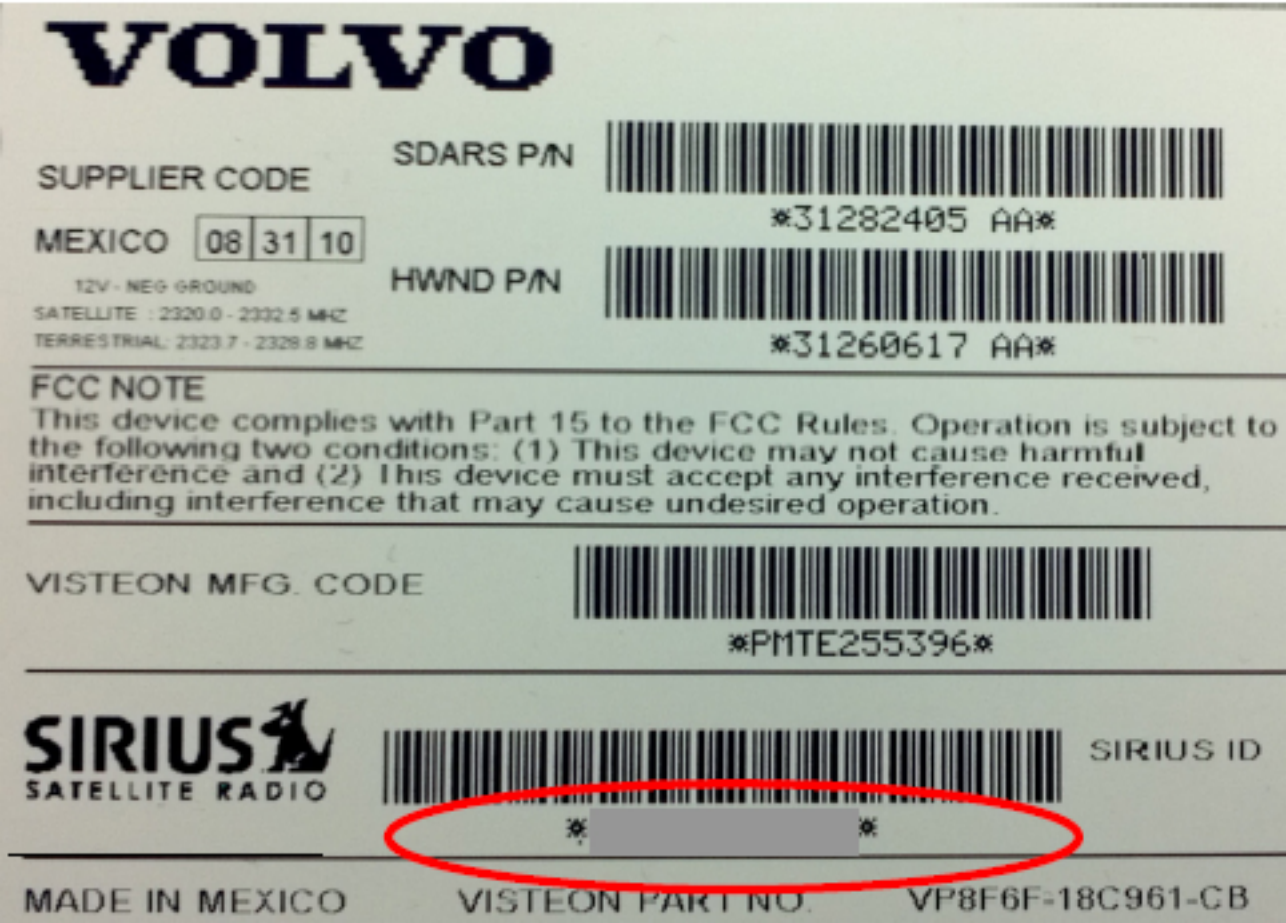

Power/Ground
MOST
Antenna

P3:

- RDAR-B1A8911 Satellite Antenna. General Electrical Failures. Circuit short to ground
- RDAR-B1A8912 Satellite Antenna. General Electrical Failures. Circuit short to battery
- RDAR-B1A8913 Satellite Antenna. General Electrical Failures. Circuit open
- RDAR-U300004 Control Module. General Signal Failures. System Internal Failures
- RDAR-U30004A Control Module. Component Failures. Incorrect component installed
- RDAR-U300055 Control Module. System Internal Failures. Not configured
- RDAR-U300087 Control Module. General Signal Failures. Missing message
- RDAR-U300098 Control Module. System Internal Failures. Component or system over temperature
- RDAR-U300362 Battery Voltage. Algorithm Based Failures. Signal compare failure

P1 & P2:

- RDAR-0001 Control module. Internal fault
- RDAR-0002 Antenna, satellite radio. Signal missing
- RDAR-0003 Antenna, satellite radio. Signal too low
- RDAR-0004 Antenna, satellite radio. Signal too high
- RDAR-0005 Incorrect Component Installed
- RDAR-0006 Control module. Configuration fault
- RDAR-0007 Control module. Configuration fault
- RDAR-0008 Control module. Overheated
- RDAR-0009 Battery voltage. Faulty signal


VOLVO
SUPPLIER CODE
SDARS P/N
31282405 AA
MEXICO 08 31 10
12V - NEG GROUND
SATELLITE : 2320.0 - 2332.5 MHZ
TERRESTRIAL: 2323.7 - 2328.8 MHZ
HWND P/N
31260617 AA
FCC NOTE
This device complies with Part 15 to the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and (2) This device must accept any interference received, including interference that may cause undesired operation.
VISTEON MFG. CODE
PMTE255396
SIRIUS
SATELLITE RADIO
SIRIUS ID
MADE IN MEXICO
VISTEON PART NO. VP8F6F-18C961-CB