SYSTEM DESCRIPTION

Harley-Davidson’s Advanced Audio System, developed in partnership with Harman/Kardon, offers improved function and sound quality with an all new integrated design. The base radio features six AM and ten FM radio presets, integrated weather band, and a single disc CD player that is compatible with CD/CDR/CDRW and MP3 format discs. The system also allows for seamless hook up of optional accessories (both current and future) to the base radio display and hand controls.

The Advanced Audio System consists of the following components:

- Radio
- CB module
- Antennas (radio and CB)
- Fairing, rear and sidecar speakers, depending upon model
- Handlebar, rear and sidecar switches, depending upon model
- High Output Amplifier, standard on 2006 sidecar equipped UItleta Classic, CVO Ultra Classic and also as an optional accessory; located under the luggage rack
- Optional accessory Bluetooth Hands Free cell phone interface module and antenna; located inside Tour-Pak
- Optional accessory XM satellite radio module and antenna; located in fairing above radio
- Optional accessory Navigation module and external antenna; module plugs into radio chassis in fairing
- System also designed for the addition of future accessories.

ONBOARD DIAGNOSTICS

Radio Diagnostic Display

While depressing and holding any two softkeys (buttons 1-6), turn the ignition switch to ON. Once the H-D logo is displayed, the system automatically performs a complete switch check, scans for current DTCs, and then displays the radio diagnostic display. Release the softkeys only after the radio diagnostic display appears. See A of Figure 6-1.

Press softkey 1, labeled “Run Test,” to perform an abbreviated switch test after the initial complete test is performed. To perform the complete test a second time, simply cycle the ignition switch, that is, turn the ignition switch to OFF, and then after a delay of at least ten seconds, turn the switch back to ON while depressing and holding any two softkeys.

If, after the initial diagnostic check, any switches are found to be shorted to B+ or ground, the radio diagnostic display reports the applicable DTC and an abbreviated description. Refer to the appropriate flow chart for resolution of the problem. See B of Figure 6-1.

If no switches are found to be shorted to B+ or ground, the technician may press selected switches to verify functionality. If a switch is functioning properly, the display shows the switch name and the word “OK.” If the switch is not working correctly, then the display does not change. All switches, handlebar, passenger, and sidecar, may be tested in this manner. See C of Figure 6-1.

NOTE

If a symptom is present without a DTC, restoring the factory default settings may sometimes resolve the issue. For more information, see Section 6.5 ADVANCED AUDIO SYSTEM SYMPTOMS, FACTORY DEFAULTS.

Pressing softkey 2 displays “Speed Pulses” followed by a speed pulse value. This feature may be employed to quickly verify whether the radio is configured correctly or whether the AVG or J1850 is working properly.

To use this feature, start the motorcycle, access the radio diagnostic display, press softkey 2 to select AVG, and then walk or push the motorcycle while viewing the speed pulse value. If a value other than zero appears, then it is an indication that J1850 and AVG are working properly. If speed pulses are not present, then either the AVG needs to be reconfigured or another problem exists. Refer to DTC U1016 for resolution of the problem if the system is configured correctly. See D of Figure 6-1.

Pressing softkey 3 displays the region and other configuration data, while softkey 4 shows the software version code. See E and F of Figure 6-1.

Softkey 5 is reserved for software upgrades and prompts the technician to install the appropriate CD, while softkey 6 causes the system to exit the radio diagnostic mode and revert to the normal radio display.
While pressing and holding any two softkeys (buttons 1-6), turn ignition switch ON until radio diagnostic display appears.

Switches shorted to B+ or ground.
Displays diagnostic trouble code (DTC).

All shorts must be fixed prior to proceeding to switch test.
Displays the failed speaker(s) and Open/Shorted status.

Displays speed pulses or J1850 speed data.
Displays calibrated region (ex: North America, HDI, Japan, etc.).

Displays the software version.

Calibration Data:
I=Intercom: 0=Disabled; 1=Enabled
J=J1850: 0=Disabled; 1=Enabled
V=Vehicle Speed Input: 0=Low; 1=High (1998-2005 Only)

Figure 6-1. Initial Diagnostics- Radio Diagnostic Display
# Table 6-1. Diagnostic Trouble Codes (DTCs) and Symptoms

<table>
<thead>
<tr>
<th>DTC</th>
<th>DESCRIPTION</th>
<th>FAULT-SET CONDITION</th>
<th>FAULT-CLEAR CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B0563</td>
<td>Battery voltage high</td>
<td>t=15 sec. V=16 volts</td>
<td>Normal range for t=15</td>
</tr>
</tbody>
</table>

## RADIO SWITCH DIAGNOSTICS

<table>
<thead>
<tr>
<th>DTC</th>
<th>DESCRIPTION</th>
<th>FAULT-SET CONDITION</th>
<th>FAULT-CLEAR CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2006</td>
<td>Radio switch stuck or open</td>
<td>t=15 sec.</td>
<td>Normal range for t=15</td>
</tr>
<tr>
<td>B2007</td>
<td>Handlebar switch shorted high</td>
<td>Ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td>Normal range for t=15 seconds</td>
</tr>
<tr>
<td>B2008</td>
<td>Handlebar switch shorted low</td>
<td>Ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td>Normal range for t=15 seconds</td>
</tr>
<tr>
<td>B2009</td>
<td>Handlebar switch stuck or open</td>
<td>t=15 sec.</td>
<td>Normal range for t=15</td>
</tr>
<tr>
<td>B2010</td>
<td>Passenger switch shorted high</td>
<td>Ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td>Normal range for t=15 seconds</td>
</tr>
<tr>
<td>B2011</td>
<td>Passenger switch shorted low</td>
<td>Ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td>Normal range for t=15 seconds</td>
</tr>
<tr>
<td>B2012</td>
<td>Passenger switch stuck or open</td>
<td>t=15 sec.</td>
<td>Normal range for t=15</td>
</tr>
<tr>
<td>B2013</td>
<td>Sidecar switch shorted high</td>
<td>Ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td>Normal range for t=15 seconds</td>
</tr>
<tr>
<td>B2014</td>
<td>Sidecar switch shorted low</td>
<td>Ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td>Normal range for t=15 seconds</td>
</tr>
<tr>
<td>B2015</td>
<td>Sidecar switch stuck or open</td>
<td>t=15 sec.</td>
<td>Normal range for t=15</td>
</tr>
</tbody>
</table>

## SPEAKER DIAGNOSTICS

<table>
<thead>
<tr>
<th>DTC</th>
<th>DESCRIPTION</th>
<th>FAULT-SET CONDITION</th>
<th>FAULT-CLEAR CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2016</td>
<td>Front speakers shorted</td>
<td>R&lt;1.5 ohm tested 1 per ignition cycle R&gt;TBD when setup as line out ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td>R&gt;1.5 ohm tested 1 per ignition cycle</td>
</tr>
<tr>
<td>B2017</td>
<td>Front speakers open</td>
<td>R&gt;100 ohm tested 1 per ignition cycle Ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td>R&lt;100 ohm tested 1 per ignition cycle</td>
</tr>
<tr>
<td>B2018</td>
<td>Front speakers shorted to ground</td>
<td>Ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td></td>
</tr>
<tr>
<td>B2019</td>
<td>Front speakers shorted to battery</td>
<td>Ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td></td>
</tr>
<tr>
<td>B2020</td>
<td>Rear speakers shorted</td>
<td>R&lt;1.5 ohm tested 1 per ignition cycle R&gt;TBD when setup as line out ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td>R&gt;1.5 ohm tested 1 per ignition cycle</td>
</tr>
<tr>
<td>B2021</td>
<td>Rear speakers open</td>
<td>R&gt;100 ohm tested 1 per ignition cycle Ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td>R&lt;100 ohm tested 1 per ignition cycle</td>
</tr>
<tr>
<td>B2022</td>
<td>Rear speakers shorted to ground</td>
<td>Ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td></td>
</tr>
<tr>
<td>B2023</td>
<td>Rear speakers shorted to battery</td>
<td>Ignition ON after Ignition OFF for at least 10 sec., t=instantaneous</td>
<td></td>
</tr>
</tbody>
</table>
Table 6-1. Diagnostic Trouble Codes (DTCs) and Symptoms

<table>
<thead>
<tr>
<th>DTC</th>
<th>DESCRIPTION</th>
<th>FAULT-SET CONDITION</th>
<th>FAULT-CLEAR CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2024</td>
<td>Sidecar speakers shorted</td>
<td>R&lt;1.5 ohm tested 1 per ignition cycle R&gt;TBD when setup as line out ignition ON or run diagnostics, t=instantaneous</td>
<td>R&gt;1.5 ohm tested 1 per ignition cycle</td>
</tr>
<tr>
<td>B2025</td>
<td>Sidecar speakers open</td>
<td>R&gt;100 ohm tested 1 per ignition cycle ignition ON or run diagnostics, t=instantaneous</td>
<td>R&lt;100 ohm tested 1 per ignition cycle</td>
</tr>
<tr>
<td>B2026</td>
<td>Sidecar speakers shorted to ground</td>
<td>Ignition ON after Ignition OFF for at least 10 sec., t= instantaneous</td>
<td></td>
</tr>
<tr>
<td>B2027</td>
<td>Sidecar speakers shorted to battery</td>
<td>Ignition ON after Ignition OFF for at least 10 sec., t= instantaneous</td>
<td></td>
</tr>
</tbody>
</table>

**SERIAL DATA BUS DIAGNOSTICS**

<table>
<thead>
<tr>
<th>DTC</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1016</td>
<td>J1850 lost communications with ECM/ICM</td>
</tr>
<tr>
<td>U1300</td>
<td>J1850 bus shorted low</td>
</tr>
<tr>
<td>U1301</td>
<td>J1850 bus shorted high</td>
</tr>
<tr>
<td>U1302</td>
<td>Infotainment bus shorted low/high</td>
</tr>
<tr>
<td>U1304</td>
<td>Infotainment bus lost communications with future</td>
</tr>
<tr>
<td>U1305</td>
<td>Infotainment bus lost communications with future</td>
</tr>
<tr>
<td>U1306</td>
<td>Infotainment bus lost communications with hands free phone module</td>
</tr>
<tr>
<td>U1307</td>
<td>Infotainment bus lost communications with CB</td>
</tr>
<tr>
<td>U1308</td>
<td>Infotainment bus lost communications with future</td>
</tr>
<tr>
<td>U1309</td>
<td>Infotainment bus lost communications with future</td>
</tr>
<tr>
<td>U1310</td>
<td>Infotainment bus lost communications with future</td>
</tr>
<tr>
<td>U1311</td>
<td>Infotainment bus lost communications with future</td>
</tr>
<tr>
<td>U1312</td>
<td>Infotainment bus lost communications with future</td>
</tr>
<tr>
<td>U1313</td>
<td>Infotainment bus lost communications with XM</td>
</tr>
<tr>
<td>U1314</td>
<td>Infotainment bus lost communications with navigation</td>
</tr>
<tr>
<td>U1315</td>
<td>Infotainment bus lost communications with future</td>
</tr>
<tr>
<td>U1316</td>
<td>Infotainment bus lost communications with future</td>
</tr>
<tr>
<td>U1317</td>
<td>Infotainment bus lost communications with high output amplifier</td>
</tr>
</tbody>
</table>

DTC 1304 thru DTC 1317 can only be viewed as historic codes using Digital Technician. The faults are detectable as current codes only if they happen to occur while in the diagnostic mode. To diagnose these conditions without the use of Digital Technician, see Section 6.5 ADVANCED AUDIO SYSTEM SYMPTOMS.
<table>
<thead>
<tr>
<th>ADVANCED AUDIO SYSTEM SYMPTOMS</th>
<th>GO TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Radio Inoperative</td>
<td>Test 6.5a</td>
</tr>
<tr>
<td>2 Poor or No Reception</td>
<td>Test 6.5b</td>
</tr>
<tr>
<td>3 Radio Beeps Every 30 Seconds</td>
<td>Test 6.5c</td>
</tr>
<tr>
<td>4 CD in Radio Will Not Eject</td>
<td>Test 6.5d</td>
</tr>
<tr>
<td>5 Static Present With Engine Running</td>
<td>Test 6.5e</td>
</tr>
<tr>
<td>6 Auxiliary Input Audio Distorted</td>
<td>Test 6.5f</td>
</tr>
<tr>
<td>7 CB Transmitter Inoperative and SWR Adjustment</td>
<td>Test 6.5g (Part 1 of 4)</td>
</tr>
<tr>
<td>8 CB Receiver Inoperative</td>
<td>Test 6.5h (Part 1 of 3)</td>
</tr>
<tr>
<td>9 Intercom Inoperative</td>
<td>Test 6.5i</td>
</tr>
<tr>
<td>10 Handheld Microphone/PTT Inoperative</td>
<td>Test 6.5j (Part 1 of 2)</td>
</tr>
<tr>
<td>11 Speaker Switch Malfunction</td>
<td>Test 6.5k</td>
</tr>
<tr>
<td>12 Headset Speakers Inoperative</td>
<td>Test 6.5l (Part 1 of 5)</td>
</tr>
<tr>
<td>13 No or Low Audio From Microphones</td>
<td>Test 6.5m (Part 1 of 4)</td>
</tr>
<tr>
<td>14 No or Low Audio With High Output Amplifier</td>
<td>Test 6.5n (Part 1 of 2)</td>
</tr>
<tr>
<td>15 No or Low Audio From XM or XM Inoperative</td>
<td>Test 6.5o (Part 1 of 2)</td>
</tr>
<tr>
<td>16 XM - No or Intermittent Reception</td>
<td>Test 6.5p</td>
</tr>
<tr>
<td>17 Navigation Inoperative</td>
<td>Test 6.5q (Part 1 of 2)</td>
</tr>
<tr>
<td>18 AVC Inoperative</td>
<td>Test 6.5r</td>
</tr>
<tr>
<td>19 Handlebar, Passenger or Sidecar Switches Inoperative</td>
<td>Test 6.5s (Part 1 of 4)</td>
</tr>
<tr>
<td>20 CD Skipping</td>
<td>Test 6.5t</td>
</tr>
<tr>
<td>21 Hands Free Phone Module Inoperative</td>
<td>Test 6.5u (Part 1 of 5)</td>
</tr>
<tr>
<td>No or Low Audio To Hands Free Phone Module</td>
<td></td>
</tr>
<tr>
<td>No or Low Audio From Hands Free Phone Module</td>
<td></td>
</tr>
<tr>
<td>Hands Free Phone Module - Phone Not Pairing</td>
<td></td>
</tr>
</tbody>
</table>
GENERAL

The sound system is designed to capture faults for each of the radio switch inputs. When a fault is detected, a DTC is generated. The DTC and related data appears on the radio display when the system is in the diagnostic mode.

<table>
<thead>
<tr>
<th>DTC</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2006</td>
<td>Radio Switch Stuck or Open</td>
</tr>
<tr>
<td>B2007</td>
<td>Handlebar Switch Shorted High</td>
</tr>
<tr>
<td>B2008</td>
<td>Handlebar Switch Shorted Low</td>
</tr>
<tr>
<td>B2009</td>
<td>Handlebar Switch Stuck or Open</td>
</tr>
<tr>
<td>B2010</td>
<td>Passenger Switch Shorted High</td>
</tr>
<tr>
<td>B2011</td>
<td>Passenger Switch Shorted Low</td>
</tr>
<tr>
<td>B2012</td>
<td>Passenger Switch Stuck or Open</td>
</tr>
<tr>
<td>B2013</td>
<td>Sidecar Switch Shorted High</td>
</tr>
<tr>
<td>B2014</td>
<td>Sidecar Switch Shorted Low</td>
</tr>
<tr>
<td>B2015</td>
<td>Sidecar Switch Stuck or Open</td>
</tr>
</tbody>
</table>

DIAGNOSTICS

Diagnostic Notes

The reference numbers below correlate with the circled numbers on the Test 6.2a thru Test 6.2j flow charts.

1. Install RADIO BREAKOUT BOX (Part No. HD-47918).
2. Install BREAKOUT BOX (Part No. HD-42682) between handlebar switch and interconnect harness.
3. Use HARNESS CONNECTOR TEST KIT (Part No. HD-41404A), brown socket probes and patch cord.
4. Use HARNESS CONNECTOR TEST KIT (Part No. HD-41404A), brown pin probe and patch cord.
Test 6.2a

DTC B2006 THRU B2015

While Pressing Any Two Softkeys (Presets), Turn Ignition Switch ON to Enter Diagnostic Mode. Will Radio Power Up?

YES

Will Radio Enter Diagnostic Mode?

YES

Tests Run Automatically. Is Fault Present?

NO

Replace Radio.

YES


NO

See DIAGNOSIS for applicable DTC:

<table>
<thead>
<tr>
<th>DTC</th>
<th>DESCRIPTION</th>
<th>GO TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2006</td>
<td>Radio Switches Stuck or Open</td>
<td>Replace Radio.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2007</td>
<td>Handlebar Switches Stuck or Open</td>
<td>Audio Test 6.2b (Part 1 of 3) Mode Test 6.2b (Part 2 of 3) PTT/Squelch Test 6.2b (Part 3 of 3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2008</td>
<td>Handlebar Switches Stuck or Open</td>
<td>Audio Test 6.2c (Part 1 of 3) Mode Test 6.2c (Part 2 of 3) PTT/Squelch Test 6.2c (Part 3 of 3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2010</td>
<td>Passenger Switches Stuck or Open</td>
<td>Audio/PTT Test 6.2e (Part 1 of 2) Mode Test 6.2e (Part 2 of 2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2011</td>
<td>Passenger Switches Stuck or Open</td>
<td>Audio/PTT Test 6.2f (Part 1 of 2) Mode Test 6.2f (Part 2 of 2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2013</td>
<td>Sidecar Switches Stuck or Open</td>
<td>PTT/Mode Test 6.2h</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2014</td>
<td>Sidecar Switches Stuck or Open</td>
<td>PTT/Mode Test 6.2i</td>
</tr>
</tbody>
</table>

Depress applicable switch to verify handlebar, passenger and/or sidecar switch functionality:

- Audio Up
- Audio DN
- Audio Mode Up
- Audio Mode DN
- Audio Mode
- PTT
- Squelch +
- Squelch -

The Display Will Show Each Function When Pressed. Does it?

YES

Face Plate Switches Inoperative or B2006?

NO

Replace Radio.

NO

6101

6101

2006 Touring: Sound System  6-7
HANDLEBAR AUDIO SWITCH SHORTED HIGH: DTC B2007


<table>
<thead>
<tr>
<th>From (-)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>3 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>8 (BN/BK)</td>
</tr>
<tr>
<td></td>
<td>22 (GY/GN)</td>
</tr>
<tr>
<td></td>
<td>23 (GN/BE)</td>
</tr>
</tbody>
</table>

   YES  NO

2. Disconnect Connector [24]. With Key ON, Check for Power at Connector [24B] at Wire Indicated on Radio Display. Is Voltage Greater Than 7 VDC?

<table>
<thead>
<tr>
<th>From (-)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>8 (BN/BK)</td>
</tr>
<tr>
<td></td>
<td>9 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>10 (GN/BE)</td>
</tr>
<tr>
<td></td>
<td>11 (GY/GN)</td>
</tr>
</tbody>
</table>

   YES  NO

   Locate and Repair Short in Handlebar Harness at Wire Indicated on Radio Display.

   Locate and Repair Short in Interconnect Harness at Wire Indicated on Radio Display.

   Replace Radio.

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

Table 6-3. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[24]</td>
<td>Interconnect Harness to Left Handlebar Switches</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing- Left Fairing Support Brace</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>FLTR</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing- Left Side of Radio Bracket</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All</td>
<td>23-Place Amp</td>
<td>Inner Fairing- Back of Radio (Right Side)</td>
</tr>
</tbody>
</table>
Handlebar Mode Switch Shorted High: DTC B2007


<table>
<thead>
<tr>
<th>From (−)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>3 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>4 (GY/W)</td>
</tr>
<tr>
<td></td>
<td>5 (V/BK)</td>
</tr>
<tr>
<td></td>
<td>6 (BN/W)</td>
</tr>
</tbody>
</table>

Is Voltage Greater Than 7 VDC?

2. With Key ON, Check for Power at Connector [22B] at Wire Indicated on Radio Display.

<table>
<thead>
<tr>
<th>From (−)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>7 (BN/W)</td>
</tr>
<tr>
<td></td>
<td>8 (GY/W)</td>
</tr>
<tr>
<td></td>
<td>9 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>10 (V/BK)</td>
</tr>
</tbody>
</table>

Is Voltage Greater Than 7 VDC?

- YES
  - Replace Radio.
- NO
  - Locate and Repair Short in Handlebar Harness at Wire Indicated on Radio Display.

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

---

Table 6-4. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[22]</td>
<td>Interconnect Harness to Right Handlebar Switches</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Deutsch (Black)</td>
<td>Inner Fairing - Fork Stem Nut Lock Plate (Left Side)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FLTR</td>
<td>12-Place Deutsch (Black)</td>
<td>Inner Fairing- Left Side of Radio Bracket</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>All</td>
<td>23-Place Amp</td>
<td>Inner Fairing- Back of Radio (Right Side)</td>
</tr>
</tbody>
</table>
HANDLEBAR PTT/SQUELCH SWITCH SHORTED HIGH: DTC B2007


<table>
<thead>
<tr>
<th>From (-)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>5 (V/BK)</td>
</tr>
<tr>
<td></td>
<td>7 (O/BK)</td>
</tr>
<tr>
<td></td>
<td>8 (BN/BK)</td>
</tr>
<tr>
<td></td>
<td>22 (GY/GN)</td>
</tr>
</tbody>
</table>

Is Voltage Greater Than 7 VDC?

2. With Key ON, Check for Power at Connector [24B] at Wire Indicated on Radio Display.

<table>
<thead>
<tr>
<th>From (-)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>7 (V/BK)</td>
</tr>
<tr>
<td></td>
<td>8 (BN/BK)</td>
</tr>
<tr>
<td></td>
<td>11 (GY/GN)</td>
</tr>
<tr>
<td></td>
<td>12 (O/BK)</td>
</tr>
</tbody>
</table>

Is Voltage Greater Than 7 VDC?

- YES
- NO

Replace Radio.

Locate and Repair Short in Handlebar Harness at Wire Indicated on Radio Display.

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

Table 6-5. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[24]</td>
<td>Interconnect Harness to Left Handlebar Switches</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing- Left Fairing Support Brace</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>FLTR</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing- Left Side of Radio Bracket</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All</td>
<td>23-Place Amp</td>
<td>Inner Fairing- Back of Radio (Right Side)</td>
</tr>
</tbody>
</table>
HANDLEBAR AUDIO SWITCH SHORTED LOW: DTC B2008


<table>
<thead>
<tr>
<th>From</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>3 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>8 (GY/GN)</td>
</tr>
<tr>
<td></td>
<td>22 (GY/GN)</td>
</tr>
<tr>
<td></td>
<td>23 (GN/BE)</td>
</tr>
</tbody>
</table>

Is Resistance Less Than 5K Ohms?

[Diagram]


<table>
<thead>
<tr>
<th>From</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>8 (GY/BK)</td>
</tr>
<tr>
<td></td>
<td>9 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>10 (GN/BE)</td>
</tr>
<tr>
<td></td>
<td>11 (GY/GN)</td>
</tr>
</tbody>
</table>

YES [Diagram]

[Diagram]

NO.

[Diagram]

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

Table 6-6. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[24]</td>
<td>Interconnect Harness to Left Handlebar Switches</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing- Left Fairing Support Brace</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>FLTR</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing - Left Side of Radio Bracket</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>23-Place Amp</td>
<td>Inner Fairing- Back of Radio (Right Side)</td>
<td></td>
</tr>
</tbody>
</table>
**Test 6.2c (Part 2 of 3)**

**HANDLEBAR MODE SWITCH SHORTED LOW: DTC B2008**


<table>
<thead>
<tr>
<th>From (-)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>3 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>4 (GY/W)</td>
</tr>
<tr>
<td></td>
<td>5 (V/BK)</td>
</tr>
<tr>
<td></td>
<td>6 (BN/W)</td>
</tr>
</tbody>
</table>

   *Is Resistance Less Than 5K Ohms?*

   - **YES**
   - **NO**

   - **YES**: Replace Radio.
   - **NO**: With Key OFF, Check for Resistance to Ground at Connector [22B] at Wire Indicated on Radio Display.

<table>
<thead>
<tr>
<th>From (-)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>1 (BN/W)</td>
</tr>
<tr>
<td></td>
<td>2 (GY/W)</td>
</tr>
<tr>
<td></td>
<td>3 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>4 (V/BK)</td>
</tr>
</tbody>
</table>

   *Is Resistance Less Than 5K Ohms?*

   - **YES**: Locate and Repair Short in Handlebar Harness at Wire Indicated on Radio Display.
   - **NO**: Locate and Repair Short in Interconnect Harness at Wire Indicated on Radio Display.

2. Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

**Table 6-7. Wire Harness Connectors**

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[22]</td>
<td>Interconnect Harness to Right Handlebar Switches</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Deutsch (Black)</td>
<td>Inner Fairing - Fork Stem Nut Lock Plate (Left Side)</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>All</td>
<td>23-Place Amp</td>
<td>Inner Fairing- Back of Radio (Right Side)</td>
</tr>
</tbody>
</table>

**Figure 6-7. Handlebar Mode Switch Circuit**
**Test 6.2c (Part 3 of 3)**

**HANDLEBAR PTT/SQUELCH SWITCH SHORTED LOW: DTC B2008**


<table>
<thead>
<tr>
<th>From</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>5 (V/BK)</td>
</tr>
<tr>
<td></td>
<td>7 (O/BK)</td>
</tr>
<tr>
<td></td>
<td>8 (BN/BK)</td>
</tr>
<tr>
<td></td>
<td>22 (GY/GN)</td>
</tr>
</tbody>
</table>

Is Resistance Less Than 5K Ohms?

- **YES**
- **NO**

2. With Key OFF, Check for Resistance to Ground at Connector [24B] at Wire Indicated on Radio Display.

<table>
<thead>
<tr>
<th>From</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>7 (V/BK)</td>
</tr>
<tr>
<td></td>
<td>8 (BN/BK)</td>
</tr>
<tr>
<td></td>
<td>11 (GY/GN)</td>
</tr>
<tr>
<td></td>
<td>12 (O/BK)</td>
</tr>
</tbody>
</table>

Is Resistance Less Than 5K Ohms?

- **YES**
- **NO**

Locate and Repair Short in Interconnect Harness at Wire Indicated on Radio Display.

**Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.**

**Table 6-8. Wire Harness Connectors**

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[24]</td>
<td>Interconnect Harness to Left Handlebar Switches</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing- Left Fairing Support Brace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FLTR</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing- Left Side of Radio Bracket</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>All</td>
<td>23-Place Amp</td>
<td>Inner Fairing- Back of Radio (Right Side)</td>
</tr>
</tbody>
</table>
### Test 6.2d (Part 1 of 3)

**HANDLEBAR AUDIO SWITCH STUCK OR OPEN: DTC B2009**

1. Remove Outer Fairing. Connect Breakout Box Leaving Connector [27B].
   - Disconnected from Radio. With Switch Depressed, Check for Continuity at Connector [27B].

<table>
<thead>
<tr>
<th>Switch Position</th>
<th>From Terminal</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio +</td>
<td>3 (PK/W)</td>
<td>23 (GN/BE)</td>
</tr>
<tr>
<td>Audio -</td>
<td>3 (PK/W)</td>
<td>22 (GY/GN)</td>
</tr>
<tr>
<td>Audio In</td>
<td>3 (PK/W)</td>
<td>8 (BN/BK)</td>
</tr>
</tbody>
</table>

Each Wire Pair Should be Less than 0.5 Ohms While Switch is Depressed and Infinity While Switch is Open. Is It?

#### YES
- Replace Audio Switch or Repair Switch Wiring.

#### NO
- Locate and Repair Open in Interconnect Harness.

2. Disconnect [24]. With Switch Depressed, Check for Continuity at Connector [24B].

<table>
<thead>
<tr>
<th>Switch Position</th>
<th>From Terminal</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio +</td>
<td>9 (PK/W)</td>
<td>10 (GN/BE)</td>
</tr>
<tr>
<td>Audio -</td>
<td>9 (PK/W)</td>
<td>11 (GY/GN)</td>
</tr>
<tr>
<td>Audio In</td>
<td>9 (PK/W)</td>
<td>8 (BN/BK)</td>
</tr>
</tbody>
</table>

Each Wire Pair Should be Less than 0.5 Ohms While Switch is Depressed and Infinity While Switch is Open. Is It?

#### YES
- Replace Radio.

#### NO
- Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

---

**Table 6-9. Wire Harness Connectors**

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[24]</td>
<td>Interconnect Harness to Left Handlebar Switches</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing- Left Fairing Support Brace</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>FLTR</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing- Left Side of Radio Bracket</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All</td>
<td>23-Place Amp</td>
<td>Inner Fairing- Back of Radio (Right Side)</td>
</tr>
</tbody>
</table>
Test 6.2d (Part 2 of 3)

HANDLEBAR MODE SWITCH STUCK OR OPEN: DTC B2009

Remove Outer Fairing. Connect Breakout Box Leaving Connector [27B].
Disconnected from Radio. With Switch Depressed, Check for Continuity at Connector [27B].

<table>
<thead>
<tr>
<th>Switch Position</th>
<th>From Terminal</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode Up</td>
<td>6 (BN/W)</td>
<td>3 (PK/W)</td>
</tr>
<tr>
<td>Mode Dn</td>
<td>5 (BN/W)</td>
<td>4 (GY/W)</td>
</tr>
<tr>
<td>Mode In</td>
<td>5 (BN/W)</td>
<td>2 (V/BK)</td>
</tr>
</tbody>
</table>

Each Wire Pair Should be Less than 0.5 Ohms While Switch is Depressed and Infinity While Switch is Open. Is It?

YES

Replace Mode Switch or Repair Switch Wiring.

NO

Locate and Repair Open in Interconnect Harness.

With Switch Depressed, Check for Continuity at Connector [22B].

<table>
<thead>
<tr>
<th>Switch Position</th>
<th>From Terminal</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode Up</td>
<td>7 (BN/W)</td>
<td>9 (PK/W)</td>
</tr>
<tr>
<td>Mode Dn</td>
<td>7 (BN/W)</td>
<td>8 (GY/W)</td>
</tr>
<tr>
<td>Mode In</td>
<td>7 (BN/W)</td>
<td>10 (V/BK)</td>
</tr>
</tbody>
</table>

Each Wire Pair Should be Less than 0.5 Ohms While Switch is Depressed and Infinity While Switch is Open. Is It?

YES

Replace Radio.

NO

6101

6532

5183

Table 6.10. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[22]</td>
<td>Interconnect Harness to Right Handlebar Switches</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Deutsch (Black)</td>
<td>Inner Fairing - Fork Stem Nut Lock Plate (Left Side)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FLTR</td>
<td>12-Place Deutsch (Black)</td>
<td>Inner Fairing - Left Side of Radio Bracket</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>All</td>
<td>23-Place Amp</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
</tbody>
</table>

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
HANDLEBAR PTT/SQUELCH SWITCH STUCK OR OPEN: DTC B2009

Remove Outer Fairing. Connect Breakout Box Leaving Connector [27B] Disconnected from Radio. With Switch Depressed, Check for Continuity at Connector [24B].

<table>
<thead>
<tr>
<th>Switch Position</th>
<th>From Terminal</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Squelch +</td>
<td>5 (V/BK)</td>
<td>22 (GY/GN)</td>
</tr>
<tr>
<td>Squelch -</td>
<td>5 (V/BK)</td>
<td>8 (BN/BK)</td>
</tr>
<tr>
<td>PTT</td>
<td>5 (V/BK)</td>
<td>7 (O/BK)</td>
</tr>
</tbody>
</table>

Each Wire Pair Should be Less than 0.5 Ohms While Switch is Depressed and Infinity While Switch is Open. Is It?

YES

NO

Replace Radio.

With Switch Depressed, Check for Continuity at Connector [24B].

<table>
<thead>
<tr>
<th>Switch Position</th>
<th>From Terminal</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Squelch +</td>
<td>7 (V/BK)</td>
<td>11 (GY/GN)</td>
</tr>
<tr>
<td>Squelch -</td>
<td>7 (V/BK)</td>
<td>8 (BN/BK)</td>
</tr>
<tr>
<td>PTT</td>
<td>7 (V/BK)</td>
<td>12 (O/BK)</td>
</tr>
</tbody>
</table>

Each Wire Pair Should be Less than 0.5 Ohms While Switch is Depressed and Infinity While Switch is Open. Is It?

YES

NO

Locate and Repair Open in Interconnect Harness.

Replace PTT/ Squelch Control Switch or Repair Switch Wiring.

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

Table 6-11. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[24]</td>
<td>Interconnect Harness to Left Handlebar Switches</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing- Left Fairing Support Brace</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>All</td>
<td>23-Place Amp</td>
<td>Inner Fairing- Back of Radio (Right Side)</td>
</tr>
</tbody>
</table>
Test 6.2e (Part 1 of 2)

PASSENGER AUDIO/PTT SWITCH SHORTED HIGH: DTC B2010

1. Remove Outer Fairing. Connect Breakout Box Leaving Connector [28B] Disconnected from Radio. With Key ON, Check for Power at Connector [28B].

<table>
<thead>
<tr>
<th>From (-)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>34 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>23 (GY/W)</td>
</tr>
<tr>
<td></td>
<td>11 (V/BK)</td>
</tr>
<tr>
<td></td>
<td>35 (O/BK)</td>
</tr>
</tbody>
</table>

Is Voltage Greater Than 7 VDC?

[YES] -> 6101 [NO]

3. Disconnect Connector [41]. With Key ON, Check for Power at Connector [41A] at Wire Indicated on Radio Display.

<table>
<thead>
<tr>
<th>From (-)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>1 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>2 (GY/W)</td>
</tr>
<tr>
<td></td>
<td>3 (V/BK)</td>
</tr>
<tr>
<td></td>
<td>4 (O/BK)</td>
</tr>
</tbody>
</table>

Is Voltage Greater Than 7 VDC?

[YES] -> 6560 [NO] -> 6115

Locate and Repair Short in Audio Harness at Wire Indicated on Radio Display.

Locate and Repair Short in Passenger Rear Control Switch Harness at Wire Indicated on Radio Display.

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

Table 6-12. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing- Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[41]</td>
<td>Rear Right Speaker/Passenger Controls</td>
<td>6-Place Mini-Deutsch</td>
<td>Inside Rear Right Speaker Box</td>
</tr>
</tbody>
</table>
**Test 6.2e (Part 2 of 2)**

**PASSENGER MODE SWITCH SHORTED HIGH: DTC B2010**

1. Remove Outer Fairing. Connect Breakout Box Leaving Connector [28B] Disconnected from Radio. With Key ON, Check for Power at Connector [28B].

<table>
<thead>
<tr>
<th>From (-)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>24 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>23 (GY/W)</td>
</tr>
<tr>
<td></td>
<td>11 (V/BK)</td>
</tr>
<tr>
<td></td>
<td>12 (BN/W)</td>
</tr>
</tbody>
</table>

Is Voltage Greater Than 7 VDC?

- **YES**
- **NO**

3. Disconnect Connector [42], With Key ON, Check for Power at Connector [42A] at Wire Indicated on Radio Display.

<table>
<thead>
<tr>
<th>From (-)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>1 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>2 (GY/W)</td>
</tr>
<tr>
<td></td>
<td>3 (V/BK)</td>
</tr>
<tr>
<td></td>
<td>4 (BN/W)</td>
</tr>
</tbody>
</table>

Is Voltage Greater Than 7 VDC?

- **YES**
- **NO**

Locate and Repair Short in Audio Harness at Wire Indicated on Radio Display.

Locate and Repair Short in Passenger Rear Control Switch Harness at Wire Indicated on Radio Display (BN/W Wire Becomes O/BK in Speaker Box).

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

### Table 6-13. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing- Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[42]</td>
<td>Rear Left Speaker/Passenger Controls</td>
<td>6-Place Mini-Deutsch</td>
<td>Inside Rear Left Speaker Box</td>
</tr>
</tbody>
</table>
PASSENGER AUDIO/PTT SWITCH SHORTED LOW: DTC B2011

1. Remove Outer Fairing. Connect Breakout Box Leaving Connector [28B] Disconnected from Radio. With Key OFF, Check for Continuity to Ground at Connector [28B].

- From (-) To Terminal (+)
  - Ground
  - 34 (PK/W)
  - 23 (GY/W)
  - 11 (V/BK)
  - 35 (O/BK)

Any Continuity Present?

   - YES
   - NO

2. Disconnect Connector [41]. With Key OFF, Check for Continuity to Ground at Connector [41A] at Wire Indicated on Radio Display.

- From (-) To Terminal (+)
  - 1 (PK/W)
  - 2 (GY/W)
  - 3 (V/BK)
  - 4 (O/BK)

Any Continuity Present?

   - YES
   - NO

   Locate and Repair Short in Audio Harness at Wire Indicated on Radio Display.

   Locate and Repair Short in Passenger Rear Control Switch Harness at Wire Indicated on Radio Display.

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

---

**Table 6-14. Wire Harness Connectors**

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing- Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[41]</td>
<td>Rear Right Speaker/Passenger Controls</td>
<td>6-Place Mini-Deutsch</td>
<td>Inside Rear Right Speaker Box</td>
</tr>
</tbody>
</table>
Test 6.2f (Part 2 of 2)

PASSENGER MODE SWITCH SHORTED LOW: DTC B2011

1. Remove Outer Fairing. Connect Breakout Box Leaving Connector [28B] Disconnected from Radio. With Key OFF, Check for Continuity to Ground at Connector [28B].

<table>
<thead>
<tr>
<th>From (-)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>34 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>23 (GY/W)</td>
</tr>
<tr>
<td></td>
<td>11 (V/BK)</td>
</tr>
<tr>
<td></td>
<td>12 (BN/W)</td>
</tr>
</tbody>
</table>

Any Continuity Present?

   YES

   NO

2. Disconnect Connector [42]. With Key OFF, Check for Continuity to Ground at Connector [42A] at Wire Indicated on Radio Display.

<table>
<thead>
<tr>
<th>From (-)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>1 (PK/W)</td>
</tr>
<tr>
<td></td>
<td>2 (GY/W)</td>
</tr>
<tr>
<td></td>
<td>3 (V/BK)</td>
</tr>
<tr>
<td></td>
<td>4 (BN/W)</td>
</tr>
</tbody>
</table>

Any Continuity Present?

   YES

   NO

3. Locate and Repair Short in Passenger Rear Control Switch Harness at Wire Indicated on Radio Display.

   Locate and Repair Short in Audio Harness at Wire Indicated on Radio Display.

   Replace Radio.

   Disconnect Connector [42].

   Replace Radio.

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

Table 6-15. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing- Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[42]</td>
<td>Rear Left Speaker/Passenger Controls</td>
<td>6-Place Mini-Deutsch</td>
<td>Inside Rear Left Speaker Box</td>
</tr>
</tbody>
</table>
PASSENGER AUDIO/PTT SWITCH STUCK OR OPEN: DTC B2012

1. Remove Outer Fairing, Connect Breakout Box Leaving Connector [28B]
   
   Disconnected from Radio. With Switch Depressed, Check for Continuity at Connector [298].

<table>
<thead>
<tr>
<th>Switch Position</th>
<th>From Terminal</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vol. Up</td>
<td>35 (O/BK)</td>
<td>34 (PK/W)</td>
</tr>
<tr>
<td>Vol. Dn</td>
<td>35 (O/BK)</td>
<td>23 (GY/W)</td>
</tr>
<tr>
<td>PTT</td>
<td>35 (O/BK)</td>
<td>11 (V/BK)</td>
</tr>
</tbody>
</table>

   Each Wire Pair Should be Less than 0.5 Ohms While Switch is Depressed and Infinity While Switch is Open. Is It?

   YES
   NO

   Replace Radio.

   6101

2. Disconnect Connector [41]. With Switch Depressed, Check for Continuity at Connector [41B].

<table>
<thead>
<tr>
<th>Switch Position</th>
<th>From Terminal</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vol. Up</td>
<td>4 (O/BK)</td>
<td>1 (PK/W)</td>
</tr>
<tr>
<td>Vol. Dn</td>
<td>4 (O/BK)</td>
<td>2 (GY/W)</td>
</tr>
<tr>
<td>PTT</td>
<td>4 (O/BK)</td>
<td>3 (V/BK)</td>
</tr>
</tbody>
</table>

   Each Wire Pair Should be Less than 0.5 Ohms While Switch is Depressed and Infinity While Switch is Open. Is It?

   YES
   NO

   Replace Rear Volume/PTT Switch or Repair Switch Wiring.

   6561
   6627

3. Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

Table 6-16. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[28] Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing- Back of Radio (Left Side)</td>
<td></td>
</tr>
<tr>
<td>[41] Rear Right Speaker/Passenger Controls</td>
<td>6-Place Mini-Deutsch</td>
<td>Inside Rear Right Speaker Box</td>
<td></td>
</tr>
</tbody>
</table>
PASSENGER MODE SWITCH STUCK OR OPEN: DTC B2012

Remove Outer Fairing, Connect Breakout Box Leaving Connector [28B]. Disconnected from Radio. With Switch Depressed, Check for Continuity at Connector [28B].

<table>
<thead>
<tr>
<th>Switch Position</th>
<th>From Terminal</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode Up</td>
<td>12 (BN/W)</td>
<td>34 (PK/W)</td>
</tr>
<tr>
<td>Mode On</td>
<td>12 (BN/W)</td>
<td>23 (GY/W)</td>
</tr>
<tr>
<td>Mode In</td>
<td>12 (BN/W)</td>
<td>11 (V/BK)</td>
</tr>
</tbody>
</table>

Each Wire Pair Should be Less than 0.5 Ohms While Switch is Depressed and Infinity While Switch is Open. Is it?

YES

NO

Replace Radio.

6101

Disconnect Connector [42], With Switch Depressed, Check for Continuity at Connector [42B].

<table>
<thead>
<tr>
<th>Switch Position</th>
<th>From Terminal</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode Up</td>
<td>4 (O/BK)</td>
<td>1 (PK/W)</td>
</tr>
<tr>
<td>Mode On</td>
<td>4 (O/BK)</td>
<td>2 (GY/W)</td>
</tr>
<tr>
<td>Mode In</td>
<td>4 (O/BK)</td>
<td>3 (V/BK)</td>
</tr>
</tbody>
</table>

Each Wire Pair Should be Less than 0.5 Ohms While Switch is Depressed and Infinity While Switch is Open. Is it?

YES

NO

Locate and Repair open or Replace Audio Harness.

6561

Replace Mode Switch or Repair Switch Wiring.

6627

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

Table 6-17. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing- Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[42]</td>
<td>Rear Left Speaker/Passenger Controls</td>
<td>6-Place Mini-Deutsch</td>
<td>Inside Rear Left Speaker Box</td>
</tr>
</tbody>
</table>
Test 6.2h

SIDECAR SWITCHES SHORTED HIGH: DTC B2013

1. With Key ON and Radio ON, Check for Voltage at Breakout Box.

<table>
<thead>
<tr>
<th>From Terminal</th>
<th>To Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>15</td>
</tr>
</tbody>
</table>

Is Voltage Greater Than 2.7 Volts DC?

- NO
- YES

Disconnect Connector [27B] from Radio while Leaving Breakout Box Connected to Harness. With Ignition ON, Check for Voltage at Terminals 11 (-) and 15 (+) on Breakout Box. Is Voltage Present?

- NO
- YES

Inspect Connectors [27], [53] and [197] for Corrosion. Is Corrosion Present?

- NO
- YES

Clean or Repair Connector. Replace Radio. 6101

Locate and Repair Short To Voltage. 6113

Replace Radio. 6101

Verifying DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

Figure 6-18. Sidecar Switch Circuit

Table 6-18. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[6]</td>
<td>Audio to Interconnect</td>
<td>6-Place Deutsch (Black)</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing- Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[53]</td>
<td>Console Pod</td>
<td>12-Place Mini-Deutsch (Black)</td>
<td>Rear of Battery Box (Under Seat)</td>
</tr>
<tr>
<td>[197]</td>
<td>Sidecar Console</td>
<td>12-Place Mini-Deutsch (Black)</td>
<td>Inside Sidecar Console</td>
</tr>
</tbody>
</table>
With Key ON and Radio ON, Check for Voltage at Breakout Box.

<table>
<thead>
<tr>
<th>From Terminal (-)</th>
<th>To Terminal (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>15</td>
</tr>
</tbody>
</table>

Is Voltage Less Than 0.25 Volts DC?

YES

Disconnect Connector [27B] from Radio While Leaving Breakout Box Connected to Harness. Check for Continuity at Terminals 11 and 15 on Breakout Box. Is Continuity Present?

YES

Inspect Connectors [27], [53] and [197] for Corrosion. Is Corrosion Present?

NO

Clean or Repair Connector.

YES

Replace Radio.

NO

Replace Connector.

6113

6101

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

Table 6-19. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[6]</td>
<td>Audio to Interconnect</td>
<td>6-Place Deutsch (Black)</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing- Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[53]</td>
<td>Console Pod</td>
<td>12-Place Mini-Deutsch (Black)</td>
<td>Rear of Battery Box (Under Seat)</td>
</tr>
<tr>
<td>[197]</td>
<td>Sidecar Console</td>
<td>12-Place Mini-Deutsch (Black)</td>
<td>Inside Sidecar Console</td>
</tr>
</tbody>
</table>
SIDECAR SWITCHES STUCK OR OPEN: DTC B2015

With Key ON, Check for Voltage Between Terminals 11 (-) and 15 (+) at Breakout Box. Is Voltage Within Range for Each Function?

<table>
<thead>
<tr>
<th>Sidecar Button</th>
<th>Minimum Voltage</th>
<th>Maximum Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Press</td>
<td>2.13</td>
<td>2.48</td>
</tr>
<tr>
<td>Mode</td>
<td>1.88</td>
<td>2.21</td>
</tr>
<tr>
<td>PTT</td>
<td>1.66</td>
<td>1.94</td>
</tr>
<tr>
<td>Tune (+)</td>
<td>1.33</td>
<td>1.67</td>
</tr>
<tr>
<td>Volume (+)</td>
<td>0.90</td>
<td>1.33</td>
</tr>
<tr>
<td>Tune (-)</td>
<td>0.55</td>
<td>0.89</td>
</tr>
<tr>
<td>Volume (-)</td>
<td>0.33</td>
<td>0.54</td>
</tr>
</tbody>
</table>

Yes

Inspect Connectors [27], [53] and [197] for Corrosion. Is Corrosion Present?

Yes

Clean or Repair Connector.

No

Replace Radio.

Replace Sidecar Console Switch Assembly.

0 VDC

Replace Radio.

5 VDC

Disconnect Connector [197]. Measure Continuity Between Terminal 15 on Breakout Box and Pin 3 on Connector [197A] and Also Between Terminal 19 on Breakout Box and Pin 4 on Connector [197A]. Is Continuity Present?

Replace Radio.

Yes

Locate and Repair Open on V/GY or BK/GN Wire in Harness.

No

Replace Sidecar Console Switch Assembly.

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

Figure 6-20. Sidecar Switch Circuit

Table 6-20. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[6]</td>
<td>Audio to Interconnect</td>
<td>6-Place Deutsch (Black)</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing- Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[53]</td>
<td>Console Pod</td>
<td>12-Place Mini-Deutsch (Black)</td>
<td>Rear of Battery Box (Under Seat)</td>
</tr>
<tr>
<td>[197]</td>
<td>Sidecar Console</td>
<td>12-Place Mini-Deutsch (Black)</td>
<td>Inside Sidecar Console</td>
</tr>
</tbody>
</table>
GENERAL

The sound system is designed to capture faults for each of the radio speaker outputs. When a fault is detected, a DTC is generated. The DTC and related data appears on the radio display when the system is in the diagnostic mode.

<table>
<thead>
<tr>
<th>DTC</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2016</td>
<td>Front speakers shorted</td>
</tr>
<tr>
<td>B2017</td>
<td>Front speakers open</td>
</tr>
<tr>
<td>B2018</td>
<td>Front speakers shorted to ground</td>
</tr>
<tr>
<td>B2019</td>
<td>Front speakers shorted to battery</td>
</tr>
<tr>
<td>B2020</td>
<td>Rear speakers shorted</td>
</tr>
<tr>
<td>B2021</td>
<td>Rear speakers open</td>
</tr>
<tr>
<td>B2022</td>
<td>Rear speakers shorted to ground</td>
</tr>
<tr>
<td>B2023</td>
<td>Rear speakers shorted to battery</td>
</tr>
<tr>
<td>B2024</td>
<td>Sidecar speakers shorted</td>
</tr>
<tr>
<td>B2025</td>
<td>Sidecar speakers open</td>
</tr>
<tr>
<td>B2026</td>
<td>Sidecar speakers shorted to ground</td>
</tr>
<tr>
<td>B2027</td>
<td>Sidecar speakers shorted to battery</td>
</tr>
</tbody>
</table>

DIAGNOSTICS

Diagnostic Notes

The reference numbers below correlate with the circled numbers on the Test 6.3a thru Test 6.3l flow charts.

1. Install RADIO BREAKOUT BOX (Part No. HD-47918).
FRONT SPEAKERS SHORTED: DTC B2016

Is Optional Harley-Davidson Amplifier Installed?

**YES**

Disconnect Connector [149]. Install Breakout Box HD-47918 to Amplifier Harness Leaving Amplifier Disconnected. Measure Resistance Between Terminals 7 and 14 (Left Speaker) or Between Terminals 6 and 13 (Right Speaker) on Breakout Box. Is Resistance Less Than One Ohm?

**YES**

Disconnect Speaker. Measure Resistance Between Terminals 7 and 14 (Left Speaker) or Between Terminals 6 and 13 (Right Speaker) on Breakout Box. Is Resistance Less Than One Ohm?

**YES**

Locate and Repair Short Between Terminals 7 and 14 (Left Speaker) or Between Terminals 6 and 13 (Right Speaker) on Harness From Amplifier to Speaker.

**NO**

Replace Speaker.

**NO**

Replace Amplifier.

**NO**

Locate and Repair Short Between Terminals 16 and 17 (Left Speaker) or Between Terminals 1 and 18 (Right Speaker) on Harness From Radio to Speaker.

**NO**

Replace Radio.

**YES**

Disconnect Connector [27]. Install Breakout Box HD-47918 Leaving Radio Disconnected. Measure Resistance Between Terminals 16 and 17 (Left Speaker) or Between Terminals 1 and 18 (Right Speaker) on Breakout Box. Is Resistance Less Than One Ohm?

**YES**

Disconnect Speaker. Measure Resistance Between Terminals 16 and 17 (Left Speaker) or Between Terminals 1 and 18 (Right Speaker) on Breakout Box. Is Resistance Less Than One Ohm?

**YES**

Locate and Repair Short Between Terminals 16 and 17 (Left Speaker) or Between Terminals 1 and 18 (Right Speaker) on Harness From Radio to Speaker.

**NO**

Replace Speaker.

**NO**

Replace Radio.

6101

6107

6116

6531

6605

6605

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
Table 6-22. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[34]</td>
<td>Front Right Speaker</td>
<td>Spade Contacts</td>
<td>Inner Fairing - Back of Right Speaker</td>
</tr>
<tr>
<td>[35]</td>
<td>Front Left Speaker</td>
<td>Spade Contacts</td>
<td>Inner Fairing - Back of Left Speaker</td>
</tr>
<tr>
<td>[149]</td>
<td>High Output Amplifier</td>
<td>23-Place Amp</td>
<td>Under Luggage Rack (Right Side)</td>
</tr>
</tbody>
</table>
Test 6.3b
FRONT SPEAKERS OPEN: DTC B2017

Is Optional Harley-Davidson Amplifier Installed?

**YES**
- Disconnect Connector [149]. Install Breakout Box HD-47918 to Amplifier Harness Leaving Amplifier Disconnected. Measure Resistance Between Terminals 7 and 14 (Left Speaker) or Between Terminals 6 and 13 (Right Speaker) on Breakout Box. Is Resistance Greater Than 3 Ohms?

**NO**
- Replace Amplifier. 6107
- Replace Speaker. 6605

**YES**
- Measure Resistance Across Speaker Terminals. Is Resistance Greater Than 3 Ohms?

**NO**
- On Harness From Amplifier to Speaker, Locate and Repair Open Between Terminal 7 or 14 and Left Speaker, or Between Terminal 6 or 13 and Right Speaker. 6117

**YES**
- Measure Resistance Across Speaker Terminals. Is Resistance Greater Than 3 Ohms?

**NO**
- Replace Speaker. 6605

**YES**
- Replace Radio. 6101

**NO**
- On Harness From Radio to Speaker, Locate and Repair Open Between Terminal 16 or 17 and Left Speaker, or Between Terminal 1 or 18 and Right Speaker. 6532

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
**Test 6.3c**

**FRONT SPEAKERS SHORTED TO GROUND: DTC B2018**

Is Optional Harley-Davidson Amplifier Installed?

YES

Disconnect Connector [149]. Install Breakout Box HD-47918 to Amplifier Harness Leaving Amplifier Disconnected. Using Breakout Box, Measure Continuity to Ground Between Terminals 7 and 14 (Left Speaker) or Between Terminals 6 and 13 (Right Speaker) and Ground. Is Continuity Present?

YES

On Harness From Amplifier to Speaker, Locate and Repair Short to Ground Between Terminal 7 or 14 (Left Speaker) or Between Terminal 6 or 13 (Right Speaker).

NO

Replace Amplifier.

NO

Replace Radio.

NO

YES

Disconnect Connector [27]. Install Breakout Box HD-47918 Leaving Radio Disconnected. Using Breakout Box, Measure Continuity to Ground Between Terminals 16 and 17 (Left Speaker) or Between Terminals 1 and 18 (Right Speaker) and Ground. Is Continuity Present?

YES

On Harness From Radio to Speaker, Locate and Repair Short to Ground Between Terminal 16 or 17 (Left Speaker) or Between Terminal 1 or 18 (Right Speaker).

6107

NO

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
Is Optional Harley-Davidson Amplifier Installed?

YES

Disconnect Connector [149]. Install Breakout Box HD-47918 to Amplifier Harness Leaving Amplifier Disconnected. Turn Ignition ON. Measure Voltage Between Terminals 7 or 14 (Left Speaker) and Ground, or Between Terminals 6 or 13 (Right Speaker) and Ground on Breakout Box. Is Voltage Present?

NO

Install Breakout Box HD-47918 to Harness Leaving Radio Disconnected. Turn Ignition ON. Measure Voltage Between Terminal 16 or 17 (Left Speaker) and Ground, or Between Terminal 1 or 18 (Right Speaker) and Ground on Breakout Box. Is Voltage Present?

YES

Disconnect Front Speaker. Locate and Repair Short to Voltage on Wire 7 (W/O) or Wire 14 (LGN/W) on Left Speaker, or Wire 6 (GY/R) or Wire 13 (LGN/BK) on Right Speaker.

NO

Replace Amplifier.

6107

6116

6531

Replace Radio.

6101

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
Table 6-23. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[36]</td>
<td>Rear Right Speaker</td>
<td>Spade Contacts</td>
<td>Inside Rear Right Speaker Box</td>
</tr>
<tr>
<td>[37]</td>
<td>Rear Left Speaker</td>
<td>Spade Contacts</td>
<td>Inside Rear Left Speaker Box</td>
</tr>
<tr>
<td>[41]</td>
<td>Rear Right Speaker/Passenger Controls</td>
<td>6-Place Mini-Deutsch</td>
<td>Inside Rear Right Speaker Box</td>
</tr>
<tr>
<td>[42]</td>
<td>Rear Left Speaker/Passenger Controls</td>
<td>6-Place Mini-Deutsch</td>
<td>Inside Rear Left Speaker Box</td>
</tr>
<tr>
<td>[149]</td>
<td>High Output Amplifier</td>
<td>23-Place Amp</td>
<td>Under Luggage Rack (Right Side)</td>
</tr>
</tbody>
</table>

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
Figure 6-22. Rear Speaker Circuit
REAR SPEAKERS OPEN: DTC B2021

Is Optional Harley-Davidson Amplifier Installed?

YES

NO

Disconnect Connector [28]. Install Breakout Box HD-47918 to Amplifier Harness Leaving Amplifier Disconnected. Measure Resistance Between Terminals 22 and 23 (Left Speaker) or Between Terminals 8 and 15 (Right Speaker) on Breakout Box. Is Resistance Greater Than 3 Ohms?

YES

NO

Replace Amplifier.

Replace Speaker.

Measure Resistance Across Speaker Terminals. Is Resistance Greater Than 3 Ohms?

YES

NO

Replace Speaker.

On Harness From Amplifier to Speaker, Locate and Repair Open Between Terminal 22 or 23 and Left Speaker, or Between Terminal 8 or 15 and Right Speaker.

6606

6617

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
REAR SPEAKERS SHORTED TO GROUND: DTC B2022

Is Optional Harley-Davidson Amplifier Installed?

YES

1. Disconnect Connector [149]. Install Breakout Box HD-47918 to Amplifier Harness Leaving Amplifier Disconnected. Measure Continuity to Ground Between Terminals 22 or 23 (Left Speaker) and Ground, or Between Terminals 8 or 15 (Right Speaker) and Ground on Breakout Box. Is Continuity Present?

   YES

   On Harness From Amplifier Connector [149] to Speaker, Locate and Repair Short to Ground Between Terminal 22 or 23 and Left Speaker, or Between Terminal 8 or 15 and Right Speaker.

   NO

   Replace Amplifier.

   6107

   6116

NO

1. Disconnect Connector [28]. Install Breakout Box HD-47918 Leaving Radio Disconnected. Measure Continuity to Ground Between Terminal 2 or 25 (Left Speaker) and Ground, or Between Terminal 1 or 24 (Right Speaker) and Ground on Breakout Box. Is Continuity Present?

   YES

   On Harness From Radio Connector [28] to Speaker, Locate and Repair Short to Ground Between Terminal 2 or 25 and Left Speaker, or Between Terminal 1 or 24 and Right Speaker.

   NO

   Replace Radio.

   6560

   6101

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
REAR SPEAKERS SHORTED TO BATTERY: DTC B2023

Is Optional Harley-Davidson Amplifier Installed?

YES

Disconnect Connector [149]. Install Breakout Box HD-47918 to Amplifier Harness Leaving Amplifier Disconnected. Turn Ignition ON. Measure Voltage Between Terminal 22 or 23 (Left Speaker) and Ground, or Between Terminal 8 or 15 (Right Speaker) and Ground on Breakout Box. Is Voltage Present?

YES

Disconnect Speaker. Locate and Repair Short to Voltage on Terminals 8 (BN) or 15 (W/BN) for Left Speaker, or Terminals 22 (GN) or 23 (LGN/BN) for Right Speaker.

6117

NO

Replace Amplifier.

6107

NO

NO

Disconnect Connector [28]. Install Breakout Box HD-47918. Turn Ignition ON. Measure Voltage Between Terminal 2 or 25 (Left Speaker) and Ground, or Between Terminal 1 or 24 (Right Speaker) and Ground on Breakout Box. Is Voltage Present?

YES

Disconnect Speaker. Locate and Repair Short to Voltage on Terminals 2 (BN) or 25 (W/BN) for Left Speaker, or Terminals 1 (GN) or 24 (LGN/BN) for Right Speaker.

6560

NO

Replace Amplifier.

6101

NO

NO

NO

Replace Radio.

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
Test 6.3i

SIDECAR SPEAKERS SHORTED: DTC B2024

Table 6-24. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[36]</td>
<td>Rear Right Speaker</td>
<td>Spade Contacts</td>
<td>Inside Rear Right Speaker Box</td>
</tr>
<tr>
<td>[37]</td>
<td>Rear Left Speaker</td>
<td>Spade Contacts</td>
<td>Inside Rear Left Speaker Box</td>
</tr>
<tr>
<td>[41]</td>
<td>Rear Right Speaker/Passenger Controls</td>
<td>6-Place Mini-Deutsch</td>
<td>Inside Rear Right Speaker Box</td>
</tr>
<tr>
<td>[42]</td>
<td>Rear Left Speaker/Passenger Controls</td>
<td>6-Place Mini-Deutsch</td>
<td>Inside Rear Left Speaker Box</td>
</tr>
<tr>
<td>[197]</td>
<td>Sidecar Console</td>
<td>12-Place Mini-Deutsch</td>
<td>Inside Sidecar Console</td>
</tr>
</tbody>
</table>

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
Figure 6-23. Sidecar Speaker Circuit
SIDECAR SPEAKERS SHORTED TO GROUND: DTC B2026

1. Disconnect Connector [28]. Install Breakout Box HD-47918 Leaving Radio Disconnected. Measure Continuity to Ground Between Terminals 2 or 25 (Left Speaker) and Ground, or Between Terminals 1 or 24 (Right Speaker) and Ground on Breakout Box. Is Continuity Present?

   YES

   Disconnect Sidecar Speaker at Connector [37] (Left) or Connector [36] (Right). Measure Resistance Between Terminals 2 or 25 (Left Speaker) and Ground, or Between Terminals 1 or 24 (Right Speaker) and Ground. Is Continuity Present?

   YES

   Locate and Repair Short Between Terminals 2 or 25 (Left Speaker) and Ground, or Between Terminals 1 or 24 (Right Speaker) and Ground on Harness From Connector [28] to Connector [37] (Left Speaker) or Connector [36] (Right Speaker).

   NO

   Replace Radio. 

   NO

   Locate and Repair Short to Ground Between Sidecar Speaker and Connector [37E] (Left Speaker) or Connector [36E] (Right Speaker).
SIDECAR SPEAKERS SHORTED TO BATTERY: DTC B2027

1. Disconnect Connector [28]. Install Breakout Box HD-47918. Turn Ignition ON. Measure Voltage Between Terminals 2 or 25 (Left Speaker) and Ground, or Between Terminals 1 or 24 (Right Speaker) and Ground on Breakout Box. Is Voltage Present?

   YES

   NO

   Disconnect Sidecar Speaker at Connector [37] (Left Speaker) or Connector [36] (Right Speaker). Check for Voltage on Terminals 2 (BN) or 25 (W/BN) for Left Sidecar Speaker, and Terminals 1 (GN) or 24 (LGN/BN) for Right Sidecar Speaker. Is Voltage Present?

   YES

   NO

   Replace Radio.

   Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

   NO

   Locate and Repair Short to Voltage on Terminals 2 (BN) or 25 (W/BN) for Left Sidecar Speaker, or Terminals 1 (GN) or 24 (LGN/BN) for Right Sidecar Speaker on Harness Between Sidecar Speaker and Rear Speaker.

   Locate and Repair Short to Voltage on Terminals 2 (BN) or 25 (W/BN) for Left Sidecar Speaker, or Terminals 1 (GN) or 24 (LGN/BN) for Right Sidecar Speaker on Harness Between Sidecar Speaker and Rear Speaker.
GENERAL

There are two serial data BUS's. The first one is the J1850 serial data BUS which communicates between the radio and the ECM, TSSM and instruments. The second serial data BUS is the Infotainment BUS, which uses a CAN protocol to communicate between the radio and the other radio accessories. The radio captures any errors found on both serial data BUS's and stores them as DTCs.

Table 6-25. J1850 Serial Data BUS

<table>
<thead>
<tr>
<th>DTC</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1016</td>
<td>J1850 lost communications with ECM/ICM</td>
</tr>
<tr>
<td>U1300</td>
<td>J1850 bus shorted low</td>
</tr>
<tr>
<td>U1301</td>
<td>J1850 bus shorted high</td>
</tr>
</tbody>
</table>

Table 6-26. Infotainment BUS

<table>
<thead>
<tr>
<th>DTC</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1302</td>
<td>Infotainment bus shorted low/high</td>
</tr>
<tr>
<td>U1306</td>
<td>Infotainment bus lost communications with hands free phone module</td>
</tr>
<tr>
<td>U1307</td>
<td>Infotainment bus lost communications with CB</td>
</tr>
<tr>
<td>U1308</td>
<td>Infotainment bus lost communications with future</td>
</tr>
<tr>
<td>U1312</td>
<td>Infotainment bus lost communications with future</td>
</tr>
<tr>
<td>U1313</td>
<td>Infotainment bus lost communications with XM</td>
</tr>
<tr>
<td>U1314</td>
<td>Infotainment bus lost communications with navigation</td>
</tr>
<tr>
<td>U1317</td>
<td>Infotainment bus lost communications with high output amplifier</td>
</tr>
</tbody>
</table>

LOSS OF SERIAL DATA: DTC U1016

The serial data connector provides a means for the ICM or ECM, TSM/TSSM and speedometer to communicate their current status. When all operating parameters on the serial data bus are within specifications, a state of health message is sent between the components. A diagnostic trouble code (DTC) U1016 indicates that the ICM/ECM is not capable of sending this state of health message.

STARTS, THEN STALLS: DTC U1300, U1301

The typical serial data voltage range is 0 volts (inactive) to 7 volts (active). Due to the short pulse, voltages will be much lower on a DVOM. In analog mode, a DVOM reading serial data will show continuous voltage when active, typically 0.6-0.8 volts. The range for acceptable operations is greater than 0 and less than 7.0 volts.

NOTE

Problems in the fuel system or idle air control system may also create this symptom.

Diagnostic Tips

- If serial data is shorted, these codes will automatically trip the check engine light.
- DTCs P1009 and P1010 may accompany DTCs U1300 and U1301.
- If radio ground and antenna ground are open, a serial data BUS fault may occur causing a start and stall condition.

DIAGNOSTICS

Diagnostic Notes

The reference numbers below correlate with the circled numbers on the Test 6.4a thru Test 6.4h flow charts.

1. Install RADIO BREAKOUT BOX (Part No. HD-47918).
2. Connect BREAKOUT BOX (Part No. HD-42682) (black) between ICM connector [10A] and wiring harness connector [10B]. See 4.6 BREAKOUT BOX: ECM.
3. Connect BREAKOUT BOX (Part No. HD-43876) between wire harness and ECM. See 5.7 BREAKOUT BOX: EFI.
4. Use HARNESS CONNECTOR TEST KIT (Part No. HD-41404A), black socket probes and patch cord.
5. This 18-place connector is located on the hands free phone module. Disconnect the connector and GENTLY touch the probes to the terminals to make the measurement. Do not insert probe into connector.
6. The amplifier fuse is an inline fuse for all accessory installations and is mounted in the fuse block for FLHTCUSE models.
Test 6.4a

LOSS OF SERIAL DATA: DTC U1016

Enter Radio Diagnostics Mode/AVC Menu. Turn Ignition ON and Set Run/Stop Switch to RUN. Rotate Wheel. Are Speed Pulses on Radio Display Greater Than 0?

1. Install Breakout Box on Radio.

2. CARBURETED MODELS
   - While Wiggling Harness, Check Continuity Between Radio Breakout Box (HD-47918) Cavity 9 and ICM Breakout Box (HD-42662) Cavity 12 (Black). Continuity Present?
     - YES
       - Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
     - NO
       - Repair Intermittent on Lt GN/V Wire.
       - Cycle Ignition Switch to Check if DTC Still Present. Test Ride if Necessary. Does DTC U1016 Return?
         - YES
           - Replace ICM. Reprogram and Learn Password.
         - NO
           - No Trouble Found.

3. EFI MODELS
   - Check Continuity Between Radio Breakout Box Cavity 9 and ICM Breakout Box Cavity 12 (Black). Continuity Present?
     - YES
       - Repair Open on LtGN/V Wire.
     - NO
       - Replace ECM. Reprogram and Learn Password.

4. NO or Speed=0.
   - Install Breakout Box on Radio.

- *NOTE*
  See Diagnostic Notes on Page 6-42.
Table 6-27. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1]</td>
<td>Main to Interconnect</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Deutsch (Black)</td>
<td>Inner Fairing - Right Radio Support Bracket</td>
</tr>
<tr>
<td></td>
<td>Harness</td>
<td>FLTR</td>
<td>12-Place Deutsch (Black)</td>
<td>Inner Fairing - Below Radio (Right Side)</td>
</tr>
<tr>
<td>[2]</td>
<td>Main to Interconnect</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing - Right Fairing Support Brace</td>
</tr>
<tr>
<td></td>
<td>Harness</td>
<td>FLTR</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing - Below Radio (Right Side)</td>
</tr>
<tr>
<td>[10]</td>
<td>ICM</td>
<td>All</td>
<td>12-Place Deutsch</td>
<td>Under Right Side Cover</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>All</td>
<td>23-Place Amp (Black)</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[30]</td>
<td>TSM/TSSM</td>
<td>All</td>
<td>12-Place Deutsch</td>
<td>Cavity in Crossmember at Rear of Battery Box (Under Seat)</td>
</tr>
<tr>
<td>[39]</td>
<td>Speedometer</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Packard</td>
<td>Inner Fairing (Back of Speedometer)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FLTR</td>
<td>12-Place Packard</td>
<td>Under Bezel (Back of Speedometer)</td>
</tr>
<tr>
<td>[91]</td>
<td>Data Link</td>
<td>All</td>
<td>4-Place Deutsch</td>
<td>Under Right Side Cover</td>
</tr>
<tr>
<td>[108]</td>
<td>Tachometer</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Packard</td>
<td>Inner Fairing (Back of Tachometer)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FLTR</td>
<td>12-Place Packard</td>
<td>Under Bezel (Back of Tachometer)</td>
</tr>
<tr>
<td>[156]</td>
<td>Main to Interconnect</td>
<td>FLHX, FLHTC/U</td>
<td>6-Place Deutsch</td>
<td>Inner Fairing - Right Fairing Support Brace</td>
</tr>
<tr>
<td></td>
<td>Harness</td>
<td>FLTR</td>
<td>6-Place Deutsch</td>
<td>Inner Fairing - Below Radio (Right Side)</td>
</tr>
</tbody>
</table>
Table 6-28. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1]</td>
<td>Main to Interconnect Harness</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Deutsch (Black)</td>
<td>Inner Fairing - Right Radio Support Bracket</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FLTR</td>
<td>12-Place Deutsch (Black)</td>
<td>Inner Fairing - Below Radio (Right Side)</td>
</tr>
<tr>
<td>[2]</td>
<td>Main to Interconnect Harness</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing - Right Fairing Support Brace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FLTR</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing - Below Radio (Right Side)</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>All</td>
<td>23-Place Amp (Black)</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[30]</td>
<td>TSM/TSSM</td>
<td>All</td>
<td>12-Place Deutsch</td>
<td>Cavity in Crossmember at Rear of Battery Box (Under Seat)</td>
</tr>
<tr>
<td>[39]</td>
<td>Speedometer</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Packard</td>
<td>Inner Fairing (Back of Speedometer)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FLTR</td>
<td>12-Place Packard</td>
<td>Under Bezel (Back of Speedometer)</td>
</tr>
<tr>
<td>[91]</td>
<td>Data Link</td>
<td>All</td>
<td>4-Place Deutsch</td>
<td>Under Right Side Cover</td>
</tr>
<tr>
<td>[78]</td>
<td>ECM</td>
<td>All</td>
<td>36-Place Packard</td>
<td>Under Right Side Cover</td>
</tr>
<tr>
<td>[108]</td>
<td>Tachometer</td>
<td>FLHX, FLHTC/U</td>
<td>12-Place Packard</td>
<td>Inner Fairing (Back of Tachometer)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FLTR</td>
<td>12-Place Packard</td>
<td>Under Bezel (Back of Tachometer)</td>
</tr>
<tr>
<td>[156]</td>
<td>Main to Interconnect Harness</td>
<td>FLHX, FLHTC/U</td>
<td>6-Place Deutsch</td>
<td>Inner Fairing - Right Fairing Support Brace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FLTR</td>
<td>6-Place Deutsch</td>
<td>Inner Fairing - Below Radio (Right Side)</td>
</tr>
</tbody>
</table>

Figure 6-25. Serial Data Circuit: FLHX, FLHT/C/U, FLTR (Fuel Injected)
Test 6.4b
STARTS, THEN STALLS: DTC U1300, U1301

Set run/stop switch to RUN. Turn ignition key ON. Is “BUS Er” present on odometer?

YES

Turn ignition key OFF. Disconnect ECM at connector [78]. Turn ignition key ON. Is “BUS Er” present on odometer?

NO

Turn ignition key OFF. While wiggling harness, check for continuity to ground at terminal 3 of connector [91A]. Is continuity to ground present at any time?

YES

Turn ignition switch ON. While wiggling harness, check for voltage at terminal 3 of connector [91A]. Is voltage present at any time?

NO

Turn ignition switch OFF. Disconnect connector [27]. Turn ignition switch ON. Is “BUS Er” present on odometer?

NO

Replace radio.

YES

Verifying DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

NOTE
See Diagnostic Notes on Page 6-42.
**Table 6-29. Wire Harness Connectors**

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[6]</td>
<td>Audio to Interconnect Harness</td>
<td>6-Place Deutsch (Black)</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[149]</td>
<td>High Output Amplifier</td>
<td>23-Place Amp</td>
<td>Under Luggage Rack (Right Side)</td>
</tr>
<tr>
<td>[175]</td>
<td>Future</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[184]</td>
<td>CB Module</td>
<td>12-Place Mini-Deutsch</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[185]</td>
<td>XM Module</td>
<td>12-Place Mini-Deutsch</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[186]</td>
<td>Future</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[187]</td>
<td>Hands Free Phone Module</td>
<td>12-Place Mini-Deutsch</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[194]</td>
<td>Hands Free Phone Module</td>
<td>54-Place Amp</td>
<td>Inside Tour-Pak (Left Side)</td>
</tr>
</tbody>
</table>

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
Figure 6-26. Infotainment BUS Circuit
INFOTAINMENT BUS SHO RTED LOW/HIGH: DTC U1302

From INFOTAINMENT BUS SHO RTED LOW/HIGH, Test 6.4c (Part 1 of 3),

Disconnect Breakout Box From Radio Leaving Harness Connected, Measure Continuity Between Terminals 13 and 14 to Ground on HD-47918 [28]. Is Continuity Present?

YES

CB Installed?

NO

Disconnect CB Connector [184B]. Is Continuity Still Present?

YES

High Output Amplifier Installed?

NO

Disconnect High Output Amplifier Connector [149B]. Is Continuity Still Present?

YES

XM Installed?

NO

Disconnect XM Connector [185B]. Is Continuity Still Present?

YES

Hands Free Phone Module Installed?

NO

Replace High Output Amplifier.

6108

Replace XM Module.

6126

YES

Replace CB Module.

6625

YES

Replace Radio.

6102

NO

Disconnect Hands Free Phone Module Connector [194B]. Is Continuity Still Present?

YES

Locate and Repair Short to Ground on Y/O or Y/V Wires in Appropriate Harness.

NO

Replace Hands Free Phone Module.

Veri fy D TC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
INFOTAINMENT BUS SHORTED LOW/HIGH: DTC U1302

From INFOTAINMENT BUS SHORTED LOW/HIGH, Test 6.4c (Part 1 of 3):

- Disconnect Breakout Box From Radio Leaving Harness Connected. With Ignition ON, Measure Voltage Between Terminals 13 and 14 to Ground on HD-47918 [28]. Is Battery Voltage Present?
  - YES: CB Installed?
  - NO: Replace Radio.

  - CB Installed?
    - NO: Replace CB Module.
    - YES: Disconnect CB Connector [184B]. Is Battery Voltage Still Present?
      - YES: High Output Amplifier Installed?
        - NO: Replace CB Module.
        - YES: Disconnect CB Connector [184B]. Is Battery Voltage Still Present?
          - YES: XM Installed?
            - NO: Replace High Output Amplifier.
            - YES: Disconnect XM Connector [185B]. Is Battery Voltage Still Present?
              - YES: Hands Free Phone Module Installed?
                - NO: Replace XM Module.
                - YES: Locate and Repair Short to Voltage on Y/O or Y/Y Wires in Appropriate Harness.
              - NO: Replace Hands Free Phone Module.

  - Disconnect Breakout Box From Radio Leaving Harness Connected. With Ignition ON, Measure Voltage Between Terminals 13 and 14 to Ground on HD-47918 [28]. Is Battery Voltage Present?
    - NO: Replace Radio.

- Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
INFOTAINMENT BUS LOST COMMUNICATIONS WITH HANDS FREE PHONE MODULE: DTC U1306

With Ignition ON, Measure Voltage at Connector [194B] Between R/O Terminal 4 (+) and BK/GN Terminal 1 (-). Is Battery Voltage Present?

YES

Measure Voltage Between Connector [194B] Y/O Terminal 2 (+) and Y/V Terminal 1 (-). Voltage Should be 4-6 VDC. Is It?

YES

Locate and Repair Open on R/O Wire Between Connector [194B] and Radio Memory Fuse.

NO

Locate and Repair Open on BK/GN Wire Between Connector [194B] and Ground.

Measure Resistance at Connector [194B], Between BK/GN Terminal 3 to Ground. Is Resistance Less Than One Ohm?

YES

Locate and Repair Open on R/O Wire Between Connector [194B] and Radio Memory Fuse.

NO

Locate and Repair Open on Y/O or Y/V Wire Between Connectors [194B] and [28B].

Replace Hands Free Phone Module.

With Ignition ON, Measure Voltage at Connector [194B] Between R/O Terminal 4 (+) and BK/GN Terminal 1 (-). Is Battery Voltage Present?

YES

Measure Voltage Between Connector [194B] Y/O Terminal 2 (+) and Y/V Terminal 1 (-). Voltage Should be 4-6 VDC. Is It?

NO

Connect 35-pin connector HD-47918 Breakout Box to Radio and Harness in Fairing. Measure Continuity Between Terminal 2 on Connector [194B] and Terminal 13 on HD-47918 [28], and also Between Terminal 1 on Connector [194B] and Terminal 14 on HD-47918 [28]. Is Continuity Present While Wiggling Harness?

YES

Replace Radio.

NO

Locate and Repair Open on R/O Wire Between Connector [194B] and Radio Memory Fuse.

NOTE
See Diagnostic Notes on Page 6-42.

Verifying DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
Table 6-30. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[6]</td>
<td>Audio to Interconnect Harness</td>
<td>6-Place Deutsch (Black)</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[15]</td>
<td>Main to Interconnect Harness</td>
<td>4-Place Packard</td>
<td>Inner Fairing - Right Fairing Bracket</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[184]</td>
<td>CB Module</td>
<td>12-Place Mini-Deutsch</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[187]</td>
<td>Hands Free Phone Module</td>
<td>12-Place Mini-Deutsch</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[194]</td>
<td>Hands Free Phone Module</td>
<td>54-Place Amp</td>
<td>Inside Tour-Pak (Left Side)</td>
</tr>
</tbody>
</table>
INFOTAINMENT BUS LOST COMMUNICATIONS WITH CB MODULE: DTC U1307

Install Breakout Box HD-42682 and Adapters HD-45325 to Connector [184B] (Stock Harness) or Connector [184D] (Accessory Harness).
With ignition ON, Measure Voltage at Breakout Box (Black) Between Terminals 9 (+) and 10 (-). Is Battery Voltage Present?

YES

Measure Voltage Between Breakout Box Terminals 11 (-) and 12 (+). Voltage Should be 4-6 VDC. Is it?

YES

Replace CB Module.

NO

Measure Resistance at Breakout Box Between Terminals 10 to Ground. Is Resistance Less Than One Ohm?

YES

Locate and Repair Open on R/O Wire Between Connector [184B] (Stock Harness) or Connector [184D] (Accessory Harness) and Radio Memory Fuse.

NO

Locate and Repair Open on BK/GN Wire Between Connector [184B] (Stock Harness) or Connector [184D] (Accessory Harness) and Ground.

NO

Locate and Repair Open on Y/O or Y/V Wire Between Connector [184B] (Stock Harness) or Connector [184D] (Accessory Harness) and Connector [28B].

YES

Replace Radio.

NO

Connect 35-pin connector HD-47918 Breakout Box to Radio and Harness in Fairing. Measure Continuity Between Terminal 11 on HD-42682 (Black) and Terminal 13 on HD-47918 [28] and also Between Terminal 12 on HD-42682 (Black) and Terminal 14 on HD-47918 [28]. Is Continuity Present While Wiggling Harness?

YES

Replace Radio.

NO

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
Table 6-31. Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[6]</td>
<td>Audio to Interconnect Harness</td>
<td>6-Place Deutsch (Black)</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[15]</td>
<td>Main to Interconnect Harness</td>
<td>4-Place Packard</td>
<td>Inner Fairing - Right Fairing Bracket</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[184]</td>
<td>CB Module</td>
<td>12-Place Mini-Deutsch</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
</tbody>
</table>
**INFOTAINMENT BUS LOST COMMUNICATIONS WITH XM MODULE: DTC U1313**

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.

**Table 6-32. Wire Harness Connectors**

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[6]</td>
<td>Audio to Interconnect Harness</td>
<td>6-Place Deutsch (Black)</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[15]</td>
<td>Main to Interconnect Harness</td>
<td>4-Place Packard</td>
<td>Inner Fairing - Right Faring Bracket</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[185]</td>
<td>XM Module</td>
<td>12-Place Mini-Deutsch</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
</tbody>
</table>
Figure 6-29. XM Circuit
INFOTAINMENT BUS LOST COMMUNICATIONS WITH NAVIGATION MODULE: DTC U1314

Verify That the Navigation Module is Properly Seated Into the Radio and Screws are Installed. Is Module Properly Seated and Installed?

YES

Press NAV Button on Radio With Power ON. Does the Radio Show Navigation Screen (i.e. Not the “Navigation is Not Installed” Screen)?

YES

System OK. Clear Codes.

NO

Remove and Reinstall Module and Try Again.

NO

NO

Swap With Known Good Navigation Module. Does It Work?

YES

System OK.

NO

Replace Radio.

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
INFO
TAINMENT BUS LOST COMMUNICATIONS WITH HIGH OUTPUT AMPLIFIER: DTC U1317

1. Inspect fuse to amplifier. Is fuse OK?

   YES
   
   Disconnect Connector [149]. Install Breakout Box HD-44608. Measure Voltage Between Terminals 3 (+) and 20 (-) and Between Terminals 4 (+) and 21 (-) on Breakout Box HD-44608 (Black). Is Battery Voltage Present?

   NO
   
   Replace fuse.

2. Measure Voltage Between Y/O Terminal 1 (+) and Y/V Terminal 2 (-) on Breakout Box HD-44608 (Black). Voltage Should be 4-6 VDC. Is it?

   YES
   
   Disconnect Connector [28]. Install Breakout Box HD-47918 Leaving Radio Disconnected. Install Breakout Box HD-44608 to Harness Leaving Amplifier Disconnected. Measure Continuity Between Radio Breakout Box [28] Interconnect and Amplifier Breakout Box (Black Label) as Follows:

   Breakout Box HD-47918
   Connector Terminal
   [28] 13 1
   14 2
   Breakout Box HD-44608
   Terminal Connector
   1 149
   2

   Wiggle Harness While Measuring Continuity. Is Resistance Less Than One Ohm?

   NO
   
   Locate and Repair Open on R Wire Between Connector [149] and fuse or Between Fuse and Battery.

3. Measure Resistance Between Terminals 20 and 21 to Ground on Breakout Box. Is Resistance Less Than One Ohm?

   YES
   
   Locate and Repair Open on BK Wire Between Connector [149] and Ground.

   NO
   
   Locate and Repair Open on Y/V Wire Between Connectors [149B] and [28B].

   Replace Radio.

   YES
   
   Replace High Output Amplifier.

   NO
   
   Measure Voltage Between Y/O Terminal 1 (+) and Y/V Terminal 2 (-) on Breakout Box HD-44608 (Black). Voltage Should be 4-6 VDC. Is it?

   YES
   
   Replace fuse.

   NO
   
   Replace fuse.

NOTE
See Diagnostic Notes on Page 6-42.

Verify DTC is no longer present using radio diagnostics. See Section 6.1 RADIO DIAGNOSTICS. Confirm proper operation with no DTCs.
Figure 6-30. High Output Amplifier Circuit

Table 6-33. FLHTCU Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[6]</td>
<td>Audio to Interconnect Harness</td>
<td>6-Place Deutsch (Black)</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[149]</td>
<td>High Output Amplifier</td>
<td>23-Place Amp</td>
<td>Under Luggage Rack (Right Side)</td>
</tr>
</tbody>
</table>
GENERAL

A number of faults may occur that will not set a DTC. These faults are listed in Table 6-34.

FACTORY DEFAULTS

If a symptom is present without a DTC, restoring ROM defaults back to the factory settings may resolve the issue, which can sometimes be caused by a unique sequence of rider interactions with the system.

Proceed as follows:

NOTE

On FLHTCU models, set Intercom, VOX and CB squelch to midpoint and turn Weather Alert to OFF.

- Turn the ignition ON with the radio OFF
- Push and hold softkeys 1 and 3 and OK for 2 seconds
- Push the arrow up 2 times
- Push softkey 2
- Turn off ignition for 20+ seconds
- Turn ignition on and verify all defaults have reset

The following are reset to the factory ROM defaults:

- Radio presets.
- Volume levels, bass, treble, AVC, fader and VOX.
- Display contrast.
- External amplifier present is reset to no amplifier (if an external amplifier is present, it will take two LONG ignition cycles before the radio is set up to enable the external amplifier).

Table 6-34. Advanced Audio System Symptoms

<table>
<thead>
<tr>
<th>NO.</th>
<th>SYMPTOM</th>
<th>TEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Radio Inoperative</td>
<td>Go to Test 6.5a</td>
</tr>
<tr>
<td>2</td>
<td>Poor or No Reception</td>
<td>Go to Test 6.5b</td>
</tr>
<tr>
<td>3</td>
<td>Radio Beeps Every 30 Seconds</td>
<td>Go to Test 6.5c</td>
</tr>
<tr>
<td>4</td>
<td>CD in Radio Will Not Eject</td>
<td>Go to Test 6.5d</td>
</tr>
<tr>
<td>5</td>
<td>Static Present With Engine Running</td>
<td>Go to Test 6.5e</td>
</tr>
<tr>
<td>6</td>
<td>Auxiliary Input Audio Distorted</td>
<td>Go to Test 6.5f</td>
</tr>
<tr>
<td>7</td>
<td>CB Transmitter Inoperative and SWR Adjustment</td>
<td>Go to Test 6.5g (Part 1 of 4)</td>
</tr>
<tr>
<td>8</td>
<td>CB Receiver Inoperative</td>
<td>Go to Test 6.5h (Part 1 of 3)</td>
</tr>
<tr>
<td>9</td>
<td>Intercom Inoperative</td>
<td>Go to Test 6.5i</td>
</tr>
<tr>
<td>10</td>
<td>Handheld Microphone/PTT Inoperative</td>
<td>Go to Test 6.5j (Part 1 of 2)</td>
</tr>
<tr>
<td>11</td>
<td>Speaker Switch Malfunction</td>
<td>Go to Test 6.5k</td>
</tr>
<tr>
<td>12</td>
<td>Headset Speakers Inoperative</td>
<td>Go to Test 6.5l (Part 1 of 5)</td>
</tr>
<tr>
<td>13</td>
<td>No or Low Audio From Microphones</td>
<td>Go to Test 6.5m (Part 1 of 4)</td>
</tr>
<tr>
<td>14</td>
<td>No or Low Audio With High Output Amplifier</td>
<td>Go to Test 6.5n (Part 1 of 2)</td>
</tr>
<tr>
<td>15</td>
<td>No or Low Audio From XM or XM Inoperative</td>
<td>Go to Test 6.5o (Part 1 of 2)</td>
</tr>
<tr>
<td>16</td>
<td>XM - No or Intermittent Reception</td>
<td>Go to Test 6.5p</td>
</tr>
<tr>
<td>17</td>
<td>Navigation Inoperative</td>
<td>Go to Test 6.5q (Part 1 of 2)</td>
</tr>
<tr>
<td>18</td>
<td>AVC Inoperative</td>
<td>Go to Test 6.5r</td>
</tr>
<tr>
<td>19</td>
<td>Handlebar, Passenger or Sidecar Switches Inoperative</td>
<td>Go to Test 6.5s (Part 1 of 4)</td>
</tr>
<tr>
<td>20</td>
<td>CD Skipping</td>
<td>Go to Test 6.5t</td>
</tr>
<tr>
<td>21</td>
<td>Hands Free Phone Module Inoperative</td>
<td>Go to Test 6.5u (Part 1 of 5)</td>
</tr>
</tbody>
</table>

No or Low Audio To Hands Free Phone Module
No or Low Audio From Hands Free Phone Module
Hands Free Phone Module - Phone Not Pairing
HOME

- CB or PHONE present is reset to no phone (this is used by the radio to enable the intercom setting if a CB or phone are present, and like the amplifier, it will take two LONG ignition cycles before the radio completely enables the intercom).
- All DTCs are reset.
- Navigation saved data. This data is immediately updated upon navigation startup, so the user should be unaffected.

DIAGNOSTICS

Diagnostic Notes

The reference numbers below correlate with the circled numbers on the Test 6.5a thru Test 6.5u (Part 5 of 5) flow charts.

1. If radio is uncalibrated, CB is not functional. The radio will beep periodically when it is not calibrated. If the CB is not allowed in a region (such as Japan, for example), then the unit will not operate.
2. Remove outer fairing. Disconnect antenna connector from CB and replace it with a dummy load, that is, the lamp included with tool HD-39448.

NOTE

The lamp acts as a load that allows the CB to be operated and provides a means of checking relative power output and modulation.

3. To use the load, screw the dummy load onto the antenna jack of the CB using the appropriate SWR METER ADAPTER (HD-48037). Depress the PTT switch. If the CB is transmitting a carrier wave, the lamp should illuminate. Speaking into the microphone should cause the lamp to flicker. It should get brighter and dimmer depending on how loud your voice is. A change in lamp brilliance means the CB is modulating.
4. Install RADIO BREAKOUT BOX (Part No. HD-47918).
5. Use HARNESS CONNECTOR TEST KIT (Part No. HD-41404A), black pin probes and patch cords.
6. Use HARNESS CONNECTOR TEST KIT (Part No. HD-41404A), black socket probes and patch cord.
7. Part No. 70172-06 CVO CB/XM Y-Harness used on stock FLHTCUSE.
8. Part No. 70164-06 Ultra Overlay Harness used on upgraded FLHTCUSE.
9. Part No. 70169-06 Non-Ultra Overlay Harness used on upgraded FLHX, FLHTC and FLTR.
10. Part No. 70160-06 Audio Harness used on FLHTCU and FLHTCUSE.
11. The amplifier fuse is an inline fuse for all accessory installations and is mounted in the fuse block for FLHTCUSE models.
12. It is possible to have a fault on more than one handlebar control as a result of the following configuration:
   - Terminal 5, V/BK wire is common to both the PTT/Squelch and Mode handlebar controls.
   - Terminal 8, BN/BK wire is common to both the PTT/Squelch and Audio handlebar controls.
   - Terminal 22, GY/GN wire is common to both the PTT/Squelch and Audio handlebar controls.
13. Terminal 3, PK/W wire is common to both the Mode and Audio handlebar controls. Therefore, it is possible to have a fault on more than one handlebar control as a result of this configuration.
14. Use HARNESS CONNECTOR TEST KIT (Part No. HD-41404A), brown pin probe and patch cord.
15. Some aftermarket exhaust systems may cause excessive pressure on the rear mounts causing the exhaust system to be put into a bind that creates excessive vibration that the CD player may not be able to isolate.
16. This 18-place connector is located on the hands free phone module. Disconnect the connector and GENTLY touch the probes to the terminals to make the measurement.
17. When prompt button is depressed, allow 10 seconds for voice prompt to respond.
Test 6.5a

RADIO INOPERATIVE: SYMPTOM 1

1. Inspect Radio Memory and Radio Power Fuses to Radio. Are Fuses OK?
   - YES
   
   Remove Outer Fairing. Connect Breakout Box HD-47918 Leaving Connector [27B] Disconnected from Radio. Turn Ignition ON. Measure Voltage at Connector [27] Between Terminals 10 (+) and 11 (-) and Terminals 20 (+) and 19 (-). Is Battery Voltage Present?
   - NO
   
   Replace Fuse.
   - YES
   
   Measure Voltage to Ground at Terminal 12 on Breakout Box. Is Battery Voltage Present?
   - NO
   
   With Radio Still Disconnected, Measure Resistance Between Terminals 11 and 19 to Ground at Breakout Box. Is Resistance Less Than One Ohm?
   - NO
   
   Locate and Repair Open on O/BE Wire Between Fuse Block and Connector [27B].
   - YES
   
   Locate and Repair Open on O/BE Wire Between Fuse Block and Starter Relay.
   - NO
   
   - YES
   
   Locate and Repair Open on R/GY Wire Between Connector [33B] and Starter Relay.
   - NO
   
   Confirm proper operation with no DTCs.
Figure 6-31. Radio Power

Table 6-35. FLHTCU Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1]</td>
<td>Main to Interconnect Harness</td>
<td>12-Place Deutsch</td>
<td>Inner Fairing - Right Radio Support Bracket</td>
</tr>
<tr>
<td>[6]</td>
<td>Audio to Interconnect Harness</td>
<td>6-Place Deutsch (Black)</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[15]</td>
<td>Main to Interconnect Harness</td>
<td>4-Place Packard</td>
<td>Inner Fairing - Right Fairing Bracket</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[33]</td>
<td>Ignition/Light Key Switch</td>
<td>3-Place Packard</td>
<td>Inner Fairing - Under Radio</td>
</tr>
<tr>
<td>[105]</td>
<td>Fairing Cap Switches</td>
<td>12-Place Multilock</td>
<td>Inner Fairing - Above Upper Fork Bracket (Right Side)</td>
</tr>
<tr>
<td>[123]</td>
<td>Starter Relay</td>
<td>Relay Connector</td>
<td>Rear of Battery Box (Under Seat) - Left Side</td>
</tr>
</tbody>
</table>
TEST 6.5b

POOR OR NO RECEPTION: SYMPTOM 2

Figure 6-32. Radio Antenna Cable and Mast

Confirm proper operation with no DTCs.
HOME

Test 6.5c

RADIO BEEPS EVERY 30 SECONDS: SYMPTOM 3


Test 6.5d

CD IN RADIO WILL NOT EJECT: SYMPTOM 4

Remove maxi-fuse and wait five minutes. Turn radio power on and press eject button. Does CD eject?

YES
System OK.

NO
Replace Radio.

NOTE
Any disassembly of radio voids warranty.

Confirm proper operation with no DTCs.
STATIC PRESENT WITH ENGINE RUNNING: SYMPTOM 5

**Diagram:**
- **Is Static Present Only With Engine Running?**
  - **YES**
    - Disconnect AC Connector at Voltage Regulator. Start Engine. Is Static Still Present With Engine Running?
  - **NO**
    - Go to POOR OR NO RECEPTION, Test 6.5b.

- **Inspect Spark Plug Wires for Proper Resistance (4975-11960 Ohms) and Condition? Are Spark Plug Wires OK?**
  - **YES**
    - Replace Spark Plugs.
  - **NO**
    - Inspect Voltage Regulator Connections. Are Connections Tight and Free of Corrosion?
      - **YES**
        - Replace Voltage Regulator.
      - **NO**
        - Clean and Tighten Connections.

**Diagram Notes:**
- Confirm proper operation with no DTCs.

**Figure 6-33. Voltage Regulator/Spark Plug Connections**
Test 6.5f

AUXILIARY INPUT AUDIO DISTORTED: SYMPTOM 6

Turn Auxiliary Device Volume Down.

Confirm proper operation with no DTCs.
Test 6.5g (Part 1 of 4)

CB TRANSMITTER INOPERATIVE: SYMPTOM 7

Perform setup as follows:
- Press POWER button to turn radio ON.
- Press INT button. Press Softkey 1 to turn Intercom OFF.
- Set fairing mounted Headset/Speaker Switch to SPEAKER.
- Press COM button. Press Softkey 1 to turn CB radio ON.
- Set Volume Control to Middle position on horizontal bar graph display.

NOTE
If CB does not power up or appear on radio display, see INFOTAINMENT BUS LOST COMMUNICATIONS WITH CB MODULE: DTC U1307, Test 6.4e.

Depressing Any PTT Switch Will Change the Radio Display to Reflect CB Mode and Cause the Transmitter to Transmit. With PTT Switch Depressed, Channel Number Will be Inverted. Are These Your Observations?

YES

System OK.

NO

Tune Known Good Receiver to Same Channel Number as Transmitter, Transmitter OK?

YES

Go to CB TRANSMITTER INOPERATIVE, Test 6.5g (Part 3 of 4), and Perform SWR Adjustment Procedures. Can SWR be Adjusted to 2:1 or Less?

YES

System OK.

NO

Go to CB TRANSMITTER INOPERATIVE, Test 6.5g (Part 4 of 4), and Perform CB Antenna Check.

Does Unit Under Test Receiver Work OK?

YES

Go to the Appropriate PTT Inoperative Chart.

NO

Does Display Change When PTT is Depressed?

YES

Go to CB TRANSMITTER INOPERATIVE, Test 6.5g (Part 2 of 4).

NO

Replace CB Module.

NOTE
See Diagnostic Notes on Page 6-61.

Confirm proper operation with no DTCs.
HOME

Test 6.5g (Part 2 of 4)

CB TRANSMITTER INOPERATIVE: SYMPTOM 7

From CB TRANSMITTER INOPERATIVE, Test 6.5g (Part 1 of 4).

Does Lamp Glow When Transmitting?

YES

Does Lamp Change in Brilliance While Speaking?

YES

Go to CB TRANSMITTER INOPERATIVE, Test 6.5g (Part 3 of 4), and Perform SWR Adjustment Procedures. Can SWR be Adjusted to 2:1 or Less?

YES

System OK.

NO

Go to CB TRANSMITTER INOPERATIVE, Test 6.5g (Part 4 of 4), and Perform CB Antenna Check.

NO

Substitute Known Good Microphone. Repeat Test. Does Lamp Glow and Change in Brilliance While Speaking?

YES

Replace CB Module.

NO

Replace Microphone or Headset.

Go to NO OR LOW AUDIO FROM MICROPHONES, Test 6.5m (Part 1 of 4).

NOTE
See Diagnostic Notes on Page 6-61.

Confirm proper operation with no DTCs.
CB TRANSMITTER INOPERATIVE: SYMPTOM 7

SWR ADJUSTMENT

**CAUTION**

Do not press PTT switches with antenna and SWR meter disconnected. Transceiver damage could result.

Standing wave ratio (SWR) is a technical term for the procedure that checks how well the CB transmitter and antenna are matched. The SWR should be 2:1 or below on channel 20. A SWR of 1:1 is optimum.

To check SWR, a SWR meter or bridge is required. Your Harley-Davidson dealer will either have a SWR meter or direct you to a CB repair shop for a SWR check. Since the operating procedures for SWR meters vary, be sure you carefully follow the operating instructions for the SWR meter being used.

1. Locate motorcycle outdoors or in a building with a ceiling of 11 ft. (3.4 m) minimum above floor. Also, there must be 8 ft. (2.4 m) of radial clearance around motorcycle. Adjusting the SWR in an area with a lower ceiling and/or less radial clearance may result in an inaccurate adjustment.

2. Remove the outer fairing. Obtain Radio Shack SWR Meter (Part No. 21-534) or equivalent and SWR METER ADAPTERS (HD-48037). Remove the antenna cable and connect the SWR meter to the CB module. Connect the antenna cable to the SWR meter.

3. Check that the antenna loading coil bracket in Tour-Pak is tight and that antenna cable is tightly connected to loading coil.

4. Check that antenna mast is threaded securely on to base and set screw is tight.

5. Before measuring the SWR, the SWR meter must be calibrated. Follow the instructions for the meter being used. The following procedure is the general calibration most meter instructions specify.

**CAUTION**

Do not touch the antenna or meter during calibration or SWR measurement. Move CAL knob and then move your hand away from meter while calibrating.

6. With ignition and CB switches ON, the SWR meter set on “FWD”, Channel 20 selected, press either PTT switches. Hold the PTT switch and rotate the calibration (CAL) control until the meter needle aligns with the “CAL” mark.

7. Release the PTT switch and move the FWD/REF switch to “REF” (reflected).

**CAUTION**

Do not touch the antenna or meter during calibration or SWR measurement. Move CAL knob and then move your hand away from meter while calibrating. Do not press PTT switches with antenna and SWR meter disconnected. Transceiver damage could result.

8. Press and hold either PTT switch. The meter reading is the SWR.

9. If SWR is more than 3:1, remove antenna cable from CB module. Using clip-on test leads, connect one lead of ohmmeter to center pin in antenna lead and other lead to antenna mast. Meter must read 1 ohm or less. Wiggle or flex mast while observing meter. If resistance is more than 1 ohm or varies when mast is wiggled, replace mast. Inspect connections at base of loading coil and at mounting bracket. If the SWR is less than 3:1, loosen antenna set screw and change mast length.

**NOTE**

It is normal to observe a reading of less than one ohm between the center conductor and ground due to the configuration of the loading coil.

10. Repeat Step 8. If SWR became higher, adjust antenna mast in opposite direction. Continue adjusting antenna until the minimum SWR is achieved. If you cannot obtain an SWR of 2:1 or less by adjusting the antenna length, make the mast shorter to improve the SWR. Remove mast and use grinder to shorten mast (grind in small increments). If SWR cannot be adjusted to less than 2:1, see CB TRANSMITTER INOPERATIVE, Test 6.5g (Part 4 of 4).

11. After SWR is adjusted on channel 20, check SWR on channels 1 and 40. Adjust the mast length to obtain a balance between channels 1 and 40.

**NOTE**

Check the SWR if a luggage rack is installed on the Tour-Pak cover. Be sure that the Tour-Pak cover is closed when the check is performed. Accessories mounted on the Tour Pak may affect the SWR reading and broadcast range, so the luggage rack should be mounted as far forward as possible. The Ultra Tour-Pak chrome accent rail also can adversely affect SWR.
From CB TRANSMITTER INOPERATIVE, Test 6.5g (Part 1 of 4).

Disconnect Antenna Cable at Back of CB Module. Measure Continuity from Center Lead of Cable to Antenna Mast. Wiggle Mast. Is Continuity Present?

YES

Disconnect Antenna Cable at Loading Coil. Measure Continuity Between Center Lead and Ground at CB Module. Is Continuity Present?

YES

Replace Antenna Cable Between CB Module and Loading Coil.

NO

Check Continuity From Center Lead of Antenna Cable to Cable at Antenna Mast Mount. Is Continuity Present?

YES

Replace Antenna Mast.

NO

Replace Loading Coil.

Disconnect Antenna Cable at Loading Coil. Check Continuity From Center Lead of Antenna Cable to Center Lead of Cable Leading to Loading Coil. Is Continuity Present?

YES

Replace Antenna Cable Between CB Module and Loading Coil.

NO

Replace Loading Coil.

Confirm proper operation with no DTCs.
CB RECEIVER INOPERATIVE: SYMPTOM 8

Perform setup as follows:
- Press POWER button to turn radio ON.
- Press INT button. Press Softkey 1 to turn Intercom OFF.
- Set fairing mounted Headset/Speaker Switch to SPEAKER.
- Press COM button. Press Softkey 1 to turn CB radio ON.
- Set Volume Control to Middle position on horizontal bar graph display.

NOTE
If CB does not power up or appear on radio display, see INFOTAINMENT BUS LOST COMMUNICATIONS WITH CB MODULE: DTC U1307, Test 6.4e.

Press SQ- Until Bar Graph Moves to Left Most Position (Open). This Forces Squelch Open Independent of CB Signal Strength. Is CB Audio Present?

YES

Press SQ+ So Bar Graph Moves One Bar to the Right. Is Audio Still Present (With Test Signal From External Transmitter Set to Same Channel as Receiver)?

YES

Receiver OK.

NO

Go to CB TRANSMITTER INOPERATIVE, Test 6.5g (Part 3 of 4), and Perform SWR Adjustment Procedures. Can SWR be Adjusted to 2:1 or Less?

YES

Receiver OK.

NO

Go to CB TRANSMITTER INOPERATIVE, Test 6.5g (Part 3 of 4), and Perform SWR Adjustment Procedures. Can SWR be Adjusted to 2:1 or Less?

YES

Go to CB RECEIVER INOPERATIVE, Test 6.5h (Part 2 of 3).

NO

Go to CB TRANSMITTER INOPERATIVE, Test 6.5g (Part 4 of 4), and Perform CB Antenna Check.

NOTE
See Diagnostic Notes on Page 6-61.

Confirm proper operation with no DTCs.
Table 6-36. FLHTCU Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[50]</td>
<td>CB Antenna Cable</td>
<td>-</td>
<td>Inner Fairing - Back of CB Module</td>
</tr>
<tr>
<td>[184]</td>
<td>CB Module</td>
<td>12-Place Mini-Deutsch</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
</tbody>
</table>
CB RECEIVER INOPERATIVE: SYMPTOM 8

From CB RECEIVER INOPERATIVE, Test 6.5h (Part 1 of 3).

Install Breakout Box HD-42682 with Adapters HD-45325 Between Connectors [184A] and [184B]. Measure AC Voltage Between Terminals 4 and 5. Using External Transmitter for Test Signal (Both Set to Same Channel With Squelch Open), is Voltage Greater Than 0 VAC and Less Than 1 VAC?

YES

NO

Measure Voltage Between Terminals 3 and 26 on HD-47918 [28], is 0-1 VAC Present When Receiving Transmission From External Transmitter Set to Same Channel?

YES

NO

Disconnect Connector [28B] from Radio Leaving Breakout Box Connected to Harness. Measure Continuity Between Terminal 3 of Connector [28B] and Terminal 4 (R Wire) of Connector [184D], and also Between Terminal 26 of Connector [28B] and Terminal 5 (BK Wire) of Connector [184D] on HD-47918 [28]. Is Continuity Present?

YES

NO

Locate and Repair Short to Ground on Red Wire Between Connector [184D] at CB and Connector [28B] at Radio.

Locate and Repair Open on R or BK Wires From Connectors [184B/D] and [28B].

6105

6140

6141

6141

6625

6625

6105

6105

6141

6141

Measure Continuity at Terminals 4 and 5 of Breakout Box HD-42682. Is Continuity (Less Than 2 Ohms) Present?

YES

NO

Disconnect Connector [28]. Is Continuity Still Present?

YES

NO

Replace Radio.

Locate and Repair Short to Ground on Terminals 4 (R Wire) and 5 (BK Wire) Between Connectors [184B/D] and [28B].

Disconnect Connector [184A]. Is Continuity Still Present?

YES

NO

Replace CB Module.

Locate and Repair Short to Ground on Terminals 4 and 5 Between Connectors [184B/D] and [28B].

6105

6105

6625

6625

6105

6105

6625

6625

6141

Measure Continuity to Ground at Terminals 4 and 5 of Breakout Box HD-42682. Is Continuity Present?

YES

NO

Disconnect Connector [28]. Is Continuity Still Present?

YES

NO

Replace Radio.

Locate and Repair Short Between Terminals 4 (R Wire) and 5 (BK Wire) Between Connectors [184B/D] and [28B].

Replace CB Module.

6105

6105

6140

6140

6141

6141

6625

6625

6105

6105

6141

6141

Measure DC Voltage at Terminals 4 and 5 of Breakout Box HD-42682. Is DC Voltage Present?

0 Volts

Battery Voltage

Go to CB RECEIVER INOPERATIVE, Test 6.5h (Part 3 of 3).

Confirm proper operation with no DTCs.

See Diagnostic Notes on Page 6-61.
Test 6.5h (Part 3 of 3)

CB RECEIVER INOPERATIVE: SYMPTOM 8

From CB RECEIVER INOPERATIVE, Test 6.5h (Part 2 of 3).

Disconnect Connector [28]. Is DC Voltage Still Present?

YES

Disconnect Connector [184A]. Is DC Voltage Still Present?

YES

Locate and Repair Short to Voltage on Terminals 4 (R Wire) or 5 (BK Wire) Between Connectors [184B/D] and [28B].

NO

NO

Replace CB Module.

Replace Radio.

CONFIRM PROPER OPERATION WITH NO DTCs.
Perform setup as follows:
- Press POWER button to turn radio ON.
- Set fairing mounted Headset/Speaker Switch to HEADSET.
- Press COM button. Press Softkey 1 to turn CB radio OFF.
- Press INT button. Press Softkey 1 to turn Intercom ON (Setup Mode).

**NOTE**
If intercom will not enter setup mode, then intercom is not installed. See Dealer for assistance.
- Press Softkey 4 to adjust VOX sensitivity to greater than “10” bars.
- Set Front and Rear Intercom Volume Control to Middle position on horizontal bar graph display.

HARLEY-DAVIDSON

Test 6.5i

INTERCOM INOPERATIVE: SYMPTOM 9

Speak Into Intercom. Voice Should be Heard in All Headsets. Is it?

YES

Intercom OK.

NO

Press Softkey 4 So That VOX Level is at Maximum Value (open). Set Front Volume to Middle Position in Horizontal Bar Graph Display. Set Rear Volume to Middle Position. Is Intercom Audio Present When Speaking Into Microphone (Rider to Passenger and Passenger to Rider)?

YES

Adjust VOX Level down 1 step (13 bars) Using Soft Key 6, so that VOX level is no longer “open.” Then Test for Audio When Speaking Loudly Into Microphone. Audio Present?

YES

Intercom OK.

NO

Replace Radio.

6103

Is Communication Possible In Both Directions?

YES

Replace “Dead” Headset. Intercom OK?

YES

Intercom OK.

NO

Replace Microphone. Intercom OK?

YES

Measure Continuity Between Terminals 11 on Connector [53B] to Terminal 4 on Driver DIN, 10 on Connector [53B] to Terminal 1 on Driver DIN. Is Continuity Present?

YES

Swap Terminals in Cavities 10 and 11 in Connector [53B].

NO

Replace Console DIN Harness.

6103

NO

Replace Console DIN Harness.

YES

Measure Continuity Between Terminals 10 on Connector [53B] to Terminal 4 on Driver DIN, 11 on Connector [53B] to Terminal 1 on Driver DIN. Is Continuity Present?

YES

Replace Radio on Affected Vehicle.

NO

Go to NO OR LOW AUDIO FROM MICROPHONES, Test 6.5m (Part 1 of 4).

Verify Headset Operation on Another Motorcycle. Do the Speakers and Microphone Work on Suspect Headset?

YES

Does Suspect Microphone Work With CB on Known Good Vehicle?

YES

Intercom OK.

NO

Replace Headset.

6103

NO

Replace Radio.

Confirm proper operation with no DTCs.

6-76 2006 Touring: Sound System
Perform setup as follows:
- Press the POWER button to turn the radio ON.
- Press INT button. Press Softkey 1 to turn Intercom OFF.
- Press COM button. Press Softkey 1 to turn CB radio ON.
- Set fairing mounted Headset/Speaker Switch to SPEAKER.

Depressing Handheld PTT Switch Will Change the Radio Display to Reflect CB Mode and Cause the Transmitter to Transmit. With PTT Switch Depressed, Channel Number Will be Inverted. Are These Your Observations?

- YES
- NO

Enter Switch Diagnostics. With Microphone Disconnected, Does Display Show "Handheld PTT"?

- YES
- NO

Go to “SHORT” in HANDHELD MICROPHONE/PTT INOPERATIVE, Test 6.5j (Part 2 of 2).

- YES
- NO

Replace Microphone With Unit Known To Be Good. Does New Microphone Work?

- YES
- NO

Handheld Microphone PTT Circuit is OK.

Go to “OPEN” in HANDHELD MICROPHONE/PTT INOPERATIVE, Test 6.5j (Part 2 of 2).

- YES
- NO

Replace Microphone With Unit Known To Be Good. Does New Microphone Work?

- YES
- NO

Handheld Microphone PTT Circuit is OK.

Go to “OPEN” in HANDHELD MICROPHONE/PTT INOPERATIVE, Test 6.5j (Part 2 of 2).
From HANDHELD MICROPHONE/PTT INOPERATIVE, Test 6.5j (Part 1 of 2).

Use Microphone Known to be Good. Problem Still Exists?

YES

NO

Place in Diagnostic Mode. What did Test 6.5j (Part 1 of 2) Indicate?

OPEN

SHORT

Connect Breakout Box to Harness Only. Check for Continuity as Follows:

<table>
<thead>
<tr>
<th>FROM Connector Terminal</th>
<th>TO Connector Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>[27B] 2 (BE/Y)</td>
<td>Front Headset DIN 7</td>
</tr>
<tr>
<td>[28B] 17 (Y/BK)</td>
<td>Front Headset DIN 6</td>
</tr>
</tbody>
</table>

Each Wire Should be Less than 0.5 Ohms. Is It?

YES

NO

Replace Radio.

NOTE

Disconnect Connector [53]. Check for Continuity as Follows:

<table>
<thead>
<tr>
<th>FROM Connector Terminal</th>
<th>TO Connector Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>[27B] 2 (BE/Y)</td>
<td>Ground</td>
</tr>
</tbody>
</table>

Should Read Infinity. Does It?

YES

NO

Replace Radio.

Check for Continuity as Follows:

<table>
<thead>
<tr>
<th>FROM Connector Terminal</th>
<th>TO Connector Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>[27B] 2 (BE/Y)</td>
<td>[28B] 17 (Y/BK)</td>
</tr>
</tbody>
</table>

Each Wire Should be Less than 0.5 Ohms. Is It?

YES

NO

Replace Pod Headset Harness.

6103

6142

6142

6616

Check for Continuity as Follows:

<table>
<thead>
<tr>
<th>FROM Connector Terminal</th>
<th>TO Connector Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>[27B] 2 (BE/Y)</td>
<td>[53B] 6</td>
</tr>
</tbody>
</table>

Each Wire Should be Less than 0.5 Ohms. Is It?

YES

NO

Replace Pod Headset Harness.

Replace Radio.

NOTE

See Diagnostic Notes on Page 6-61.

6142

6616

6616

Check for Continuity as Follows:

<table>
<thead>
<tr>
<th>FROM Connector Terminal</th>
<th>TO Connector Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>[27B] 2 (BE/Y)</td>
<td>[28B] 4 (BE/Y)</td>
</tr>
</tbody>
</table>

Continuity Present?

YES

NO

Replace Pod Headset Harness.

Locate and Repair Open on BE/Y Wire in Audio Harness.
Table 6-37. FLHTCU Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[6]</td>
<td>Audio to Interconnect Harness</td>
<td>6-Place Deutsch (Black)</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[53]</td>
<td>Console Pod</td>
<td>12-Place Mini-Deutsch</td>
<td>Rear of Battery Box (Under Seat)</td>
</tr>
</tbody>
</table>
SPEAKER SWITCH MALFUNCTION: SYMPTOM 11

PLACE RADIO IN DIAGNOSTIC MODE. PLACE SPEAKER SWITCH IN HEADSET (UP) POSITION. DOES DISPLAY SHOW SPOK A ONLY (NO SPOK B)?

YES

PLACE RADIO IN DIAGNOSTIC MODE. PLACE SPEAKER SWITCH IN HEADSET (UP) POSITION. DOES DISPLAY SHOW SPOK B?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER MODE. DOES DISPLAY SHOW SPOK A?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER MODE. DOES DISPLAY SHOW SPOK B?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER MODE. DOES DISPLAY SHOW SPOK A AND SPOK B?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER MODE. DOES DISPLAY SHOW SPOK B?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER MODE. DOES DISPLAY SHOW SPOK A?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER AND HEADSET MODE (MIDDLE). DOES DISPLAY SHOW SPOK B?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER MODE (DOWN). DOES DISPLAY SHOW SPOK A AND SPOK B?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER MODE. IS VOLTAGE LESS THAN 2.5V ON TERMINAL 13 AT BREAKOUT BOX [27]?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER MODE. IS VOLTAGE LESS THAN 2.5V ON TERMINAL 21 AT BREAKOUT BOX [27]?

NO

YES

PLACE SPEAKER SWITCH IN HEADSET (UP) POSITION. IS VOLTAGE LESS THAN 2.5V ON TERMINAL 13 AT BREAKOUT BOX [27]?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER MODE. IS VOLTAGE LESS THAN 2.5V ON TERMINAL 13 AT BREAKOUT BOX [27]?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER MODE. IS VOLTAGE LESS THAN 2.5V ON TERMINAL 13 AT BREAKOUT BOX [27]?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER MODE. IS VOLTAGE LESS THAN 2.5V ON TERMINAL 13 AT BREAKOUT BOX [27]?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER MODE. IS VOLTAGE LESS THAN 2.5V ON TERMINAL 13 AT BREAKOUT BOX [27]?

NO

YES

PLACE SPEAKER SWITCH IN SPEAKER MODE. IS VOLTAGE LESS THAN 2.5V ON TERMINAL 13 AT BREAKOUT BOX [27]?
Table 6-38. FLHTCU Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1]</td>
<td>Main to Interconnect Harness</td>
<td>12-Place Deutsch</td>
<td>Inner Fairing - Right Radio Support Bracket</td>
</tr>
<tr>
<td>[15]</td>
<td>Main to Interconnect Harness</td>
<td>4-Place Packard</td>
<td>Inner Fairing - Right Fairing Bracket</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[105]</td>
<td>Fairing Cap Switches</td>
<td>12-Place Multilock</td>
<td>Inner Fairing - Above Upper Fork Bracket (Right Side)</td>
</tr>
</tbody>
</table>
Connect Headset to Different Headset Connector on Motorcycle. Do Helmet Speakers Work?

YES

NO

Go to HEADSET SPEAKERS INOPERATIVE, Test 6.5i (Part 2 of 5).

Substitute Known Good Coil Cord. Do Helmet Speakers Work?

YES

NO

Replace Headset. Do Helmet Speakers Work?

YES

NO

Go to HEADSET SPEAKERS INOPERATIVE, Test 6.5i (Part 2 of 5).

Confirm proper operation with no DTCs.
Test 6.5l (Part 2 of 5)
HEADSET SPEAKERS INOPERATIVE: SYMPTOM 12

From HEADSET SPEAKERS INOPERATIVE, Test 6.5l (Part 1 of 5).
Which Headset Connector is Not Working?

- All
  - Go to SPEAKER SWITCH MALFUNCTION, Test 6.5k.
- Rider
  - Go to HEADSET SPEAKERS INOPERATIVE, Test 6.5l (Part 3 of 5).
- Passenger
  - Go to HEADSET SPEAKERS INOPERATIVE, Test 6.5l (Part 4 of 5).
- Sidecar
  - Go to HEADSET SPEAKERS INOPERATIVE, Test 6.5l (Part 5 of 5).

Confirm proper operation with no DTCs.
Test 6.5l (Part 3 of 5)
HEADSET SPEAKERS INOPERATIVE: SYMPTOM 12

From HEADSET SPEAKERS INOPERATIVE, Test 6.5l (Part 2 of 5).

4

Measure Continuity Between Terminals:
17 on HD-47918 [28] to Terminal 2 on Rider DIN,
6 on HD-47918 [28] to Terminal 5 on Rider DIN,
29 on HD-47918 [28] to Terminal 3 on Rider DIN.
Is Continuity Present?

YES

NO

Measure Continuity Between Terminals 17, 6 and 29 on HD-47918 [28].
Is Continuity Present?

YES

NO

Locate and Repair Open on Y/R, Y/W or Y/BK Wires Between Connector [28] and Rider DIN.

Locate Continuity Between Terminals 17, 6 and 29 on HD-47918 [28] and Ground.
Is Continuity Present?

YES

NO

YES

NO

Disconnect Connector [53], Measure Continuity Between Terminals 17, 6 and 29 on HD-47918 [28].
Is Continuity Still Present?

YES

NO

YES

NO

Replace Rider Headset Connector.

Locate and Repair Short on Y/R, Y/W or Y/BK Wires Between Connectors [53B] and [28B].

Locate and Repair Short to Ground on Y/R or Y/W Wires Between Connectors [53B] and [28B].

Replace Rider Headset Connector.

Measure Voltage Between Terminals 6 and 29 on HD-47918 [28] and Ground.
Is Voltage Greater Than 9 VDC Present?

YES

NO

YES

NO

Disconnect Connector [53], Measure Voltage on Terminals 6 and 29 on HD-47918 [28] to Ground.
Is Voltage Greater Than 9 VDC Present?

YES

NO

Locate and Repair Short to Voltage on Y/R or Y/W Wires Between Connectors [53B] and [28B].

Replace Rider Headset Connector.

NO

YES

Confirm proper operation with no DTCs.
Test 6.5l (Part 4 of 5)
HEADSET SPEAKERS INOPERATIVE: SYMPTOM 12

From HEADSET SPEAKERS INOPERATIVE, Test 6.5l (Part 2 of 5).

Measure Continuity Between Terminals:
17 on HD-47918 [28] to Terminal 2 on Passenger DIN,
5 on HD-47918 [28] to Terminal 5 on Passenger DIN,
28 on HD-47918 [28] to Terminal 3 on Passenger DIN.
Is Continuity Present?

- YES
- NO

- YES
- NO

Locate and Repair Open Between GY/Y, GY/O and Y/BK Wires on Connector [28] and Passenger DIN.

Measure Continuity Between Terminals 17, 28 and 5 on HD-47918 [28].
Is Continuity Present?

- YES
- NO

Locate and Repair Open Between GY/Y, GY/O and Y/BK Wires on Connector [28] and Passenger DIN.

Measure Continuity Between Terminals 17, 28 and 5 on HD-47918 [28]
and Ground. Is Continuity Present?

- YES
- NO

Locate and Repair Short Between GY/Y, GY/O and Y/BK Wires Between Connector [28B] and Passenger DIN.

Terminal 17 Only.

Measure Voltage Between Terminals 28 and 5 on HD-47918 [28] and
Ground. Is Voltage Greater Than 9 VDC Present?

- YES
- NO

Locate and Repair Short to Ground on GY/Y or GY/O Wires Between Connector [28B] and Passenger DIN.

Replace Radio.

Locate and Repair Short to Voltage on GY/Y or GY/O Wires Between Connector [28B] and Passenger DIN.

Replace Radio.

Confirm proper operation with no DTCs.

NOTE
See Diagnostic Notes on Page 6-61.
HEADSET SPEAKERS INOPERATIVE: SYMPTOM 12

From HEADSET SPEAKERS INOPERATIVE, Test 6.5l (Part 2 of 5).

Measure Continuity Between Terminals: 17 on HD-47918 [28] to Terminal 2 on Sidecar DIN, 15 on HD-47918 [28] to Terminal 5 on Sidecar DIN, 16 on HD-47918 [28] to Terminal 3 on Sidecar DIN. Is Continuity Present?

YES

NO

Measure Continuity Between Terminals 17, 15 and 16 on HD-47918 [28] and Ground. Is Continuity Present?

YES

NO

Replace Radio.

Disconnect Sidecar Console Connector [197]. Measure Continuity Between Terminals 17, 15 and 16 on HD-47918 [28]. Is Continuity Still Present?

YES

NO

Locate and Repair Short Between Y/R, Y/W and Y/BK Wires in Sidecar Console Harness.

Locate and Repair Short Between GY/BK, GN/V and Y/BK Wires in Sidecar Harness.

Locate and Repair Short Between GY/BK, GN/V and Y/BK Wires in Audio Harness.

Locate and Repair Short Between Y/R or Y/W wires in Sidecar Harness.

Locate and Repair Short Between GY/BK or GN/V Wires in Sidecar Harness.

Locate and Repair Short Between Y/R or Y/W wires in Sidecar Harness.

NO

YES

Disconnect Connector [53]. Measure Voltage at Terminals 15 (+) and 16 (+) on HD-47918 [28] to Ground (-). Is Voltage Greater Than 9 VDC Present?

YES

NO

Replace Radio.

Disconnect Sidecar Console Connector [197]. Measure Voltage at Terminals 15 (+) and 16 (+) on HD-47918 [28] to Ground (-). Is Voltage Greater Than 9 VDC Present?

YES

NO

Locate and Repair Short to Voltage on GY/BK or GN/V Wires in Sidecar Harness.

Locate and Repair Short to Voltage on GY/BK or GN/V Wires in Sidecar Harness.

Locate and Repair Short to Voltage on Y/R or Y/W wires in Sidecar Harness.

Locate and Repair Short to Voltage on GY/BK or GN/V Wires in Sidecar Harness.

Locate and Repair Short to Voltage on Y/R or Y/W wires in Sidecar Harness.

Locate and Repair Short to Voltage on GY/BK or GN/V Wires in Sidecar Harness.

Confirms proper operation with no DTCs.

RETURN TO HOME PAGE
Figure 6-38. Headset Speaker Circuit

Table 6-39. FLHTCU Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[53]</td>
<td>Console Pod</td>
<td>12-Place Mini-Deutsch</td>
<td>Rear of Battery Box (Under Seat)</td>
</tr>
<tr>
<td>[197]</td>
<td>Sidecar Console</td>
<td>12-Place Mini-Deutsch</td>
<td>Inside Sidecar Console</td>
</tr>
</tbody>
</table>
**Test 6.5m (Part 1 of 4)**

**NO OR LOW AUDIO FROM MICROPHONES: SYMPTOM 13**

1. Place a Known Working Headset in Rider DIN Connector. Turn Intercom ON, Set VOX Threshold to OPEN and Set Intercom Volume to Mid Level. Do You Hear Audio in the Headset Earpiece When Speaking?
   - **YES**
   - **NO**

2. Replace Cable on Bad Headset or Replace Hand Held Microphone. Reinstall on Rider DIN Connector. Do You Hear Audio in the Headset Earpiece When Speaking?
   - **YES**
   - **NO**

3. Replace Headset.

4. Remove Microphones From DIN Connectors. Measure DC Voltage Between Pin 4 (+ Probe) and Pin 1 (- Probe) of Each DIN Connector. Is the Voltage Between +7.5 and +8.5 Volts?
   - **YES**
   - **NO**

5. Go to NO OR LOW AUDIO FROM MICROPHONES, Test 6.5m (Part 2 of 4).

6. Measure Continuity Between Terminals as Follows. Is Continuity Present?

<table>
<thead>
<tr>
<th>FROM</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Terminal Name</td>
<td>Connector</td>
</tr>
<tr>
<td>Mic Sum Out (+)</td>
<td>[28]</td>
</tr>
<tr>
<td>Mic Sum (-)</td>
<td>[28]</td>
</tr>
<tr>
<td>Mic Sum Out (+)</td>
<td>[28]</td>
</tr>
<tr>
<td>Mic Sum Out (+)</td>
<td>[28]</td>
</tr>
</tbody>
</table>

7. Measure Voltage Between Terminal 33 and Ground. Is Voltage Greater Than 9 Volts?
   - **YES**
   - **NO**

8. Replace Radio.

9. Go to NO OR LOW AUDIO FROM MICROPHONES, Test 6.5m (Part 3 of 4).

10. Go to NO OR LOW AUDIO FROM MICROPHONES, Test 6.5m (Part 2 of 4).

11. Confirm proper operation with no DTCs.
Test 6.5m (Part 2 of 4)

NO OR LOW AUDIO FROM MICROPHONES: SYMPTOM 13

Disconnect Connector [28A] From Breakout Box. Is There Still Continuity Between Terminals 33 and 22 on Connector [28B]?

YES

Reinstall Connector [28A] to Breakout Box. Is CB Installed?

NO

Replace Radio.

YES

NO

Remove CB Module. Is There Still Continuity Between Terminals 33 and 22 on Connector [28B]?

YES

Replace CB Module.

NO

Is CVO CB/XM Y-Harness 70172-06 Installed?

NO

YES

Disconnect Connector [184C] From [184B]. Is There Still Continuity Between Terminals 33 and 22 on Connector [28B]?

YES

Locate and Repair Short in CB/XM Y-Harness 70172-06 Between R and BK Wires.

NO

Locate Connector [184C] to [184B].

Is Hands Free Phone Module Installed?

NO

YES

Disconnect Connector [184C] From [184B]. Is There Still Continuity Between Terminals 33 and 22 on Connector [28B]?

YES

Locate and Repair Short in CB/XM Y-Harness 70172-06 Between R and BK Wires.

NO

Locate Connector [184C] to [184B].

Is Hands Free Phone Module Installed?

NO

YES

Remove Hands Free Phone Module at Connector [194]. Is There Still Continuity Between Terminals 33 and 22 on Connector [28B]?

YES

Locate and Repair Short in Hands Free Phone Module Harness 76467-06 Between R and BK Wires.

NO

Replace Hands Free Phone Module.

Disconnect Connector [184C] From [184B]. Is There Still Continuity Between Terminals 33 and 22 on Connector [28B]?

YES

Locate and Repair Short in P&A Ultra Overlay Harness 70164-06 Installed?

NO

YES

Locate and Repair Short in P&A Ultra Overlay Harness 70164-06 Between R and BK Wires.

Locate and Repair Short in P&A Ultra Overlay Harness 70169-06 or Audio Harness 70160-06 Between R and BK Wires.

Confirm proper operation with no DTCs.

NOTE
See Diagnostic Notes on Page 6-61.
Test 6.5m (Part 3 of 4)

NO OR LOW AUDIO FROM MICROPHONES: SYMPTOM 13

Disconnect Connector [28A] From Breakout Box. Measure Voltage Between Terminals 33 and 22 on Connector [28B]. Is it Greater Than 9 Volts?

- YES: Replace Radio.
- NO: Reinstall Connector [28A] to Breakout Box. Is CB Installed?

- NO: Remove CB Module. Measure Voltage Between Terminals 33 and 22 on Connector [28B]. Is it Greater Than 9 Volts?
- YES: Replace CB Module.

- NO: Is CVO CB/XM Y-Harness 70172-06 Installed?
- YES: Disconnect Connector [184C] From [184B]. Measure Voltage Between Terminals 33 and 22 on Connector [28B]. Is it Greater Than 9 Volts?
- NO: Reconnect Connector [184C] to [184B].

- YES: Locate and Repair Short to Voltage in CB/XM Y-Harness 70172-06 on R or ++R Wires.
- NO: Remove Hands Free Phone Module at Connector [194]. Measure Voltage Between Terminals 33 and 22 on Connector [28B]. Is it Greater Than 9 Volts?

- NO: Remove Connector [187A]. Measure Voltage Between Terminals 33 and 22 on Connector [28B]? Is it Greater Than 9 Volts?
- YES: Replace Hands Free Phone Module.

- NO: Is P&A Ultra Overlay Harness 70164-06 Installed?
- YES: Locate and Repair Short in Hands Free Phone Module Harness 76467-06 Between R and ++R Wires.
- NO: Locate and Repair Short to Voltage in P&A Non-Ultra Overlay Harness 70169-06 or Audio Harness 70160-06 Between R and ++R Wires.

- YES: Locate and Repair Short to Voltage in P&A Ultra Overlay Harness 70164-06 Between R and ++R Wires.
- NO: Locate and Repair Short to Voltage in P&A Ultra Overlay Harness 70160-06 Between R and ++R Wires.

Confirm proper operation with no DTCs.

NOTE
See Diagnostic Notes on Page 6-61.
NO OR LOW AUDIO FROM MICROPHONES: SYMPTOM 13

Remove All Microphones/Headsets. Measure Continuity Between Terminals as Follows.

<table>
<thead>
<tr>
<th>FROM</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shield</td>
<td>Rider DIN Tab [28B]</td>
</tr>
<tr>
<td>Mic (+)</td>
<td>Rider DIN 4 [28B]</td>
</tr>
<tr>
<td>Mic (-)</td>
<td>Rider DIN 1 [28B]</td>
</tr>
<tr>
<td>Shield</td>
<td>Passenger DIN Tab [28B]</td>
</tr>
<tr>
<td>Mic (+)</td>
<td>Passenger DIN 4 [28B]</td>
</tr>
<tr>
<td>Mic (-)</td>
<td>Passenger DIN 1 [28B]</td>
</tr>
<tr>
<td>Shield</td>
<td>Sidecar DIN Tab [28B]</td>
</tr>
<tr>
<td>Mic (+)</td>
<td>Sidecar DIN 4 [28B]</td>
</tr>
<tr>
<td>Mic (-)</td>
<td>Sidecar DIN 1 [28B]</td>
</tr>
</tbody>
</table>

Is Continuity Present?

6153

NO OR LOW AUDIO FROM MICROPHONES: SYMPTOM 13

Install Breakout Box HD-44608. Measure Continuity Between Terminals 20 (Mic Shared -) and 21 (Mic Shared Shield) on Connector [28B] and Ground. Is Continuity Present?

6106

NO

Measure Continuity Between Terminals 9, 10 and 32 (Mic +) on Connector [28B] and Ground. Is Continuity Present?

6155

NO

Disconnect Connector [28B] From Breakout Box. Measure Voltage at Terminals 9, 10 and 32. Is Voltage Between 7.5 and 8.5 Volts?

6106

NO

Locate and Repair Short to Ground on R Wire Showing Continuity.

6155

YES

Locate and Repair Short to Battery on R Wire Showing Short to Voltage.

6155

NO

Were You Directed to These Charts From NO OR LOW AUDIO TO HAND FREE MODULE?

6106

NO

Replace Hands Free Phone Module.

YES

Replace Hands Free Phone Module.
Figure 6-39. Microphone Audio Input Circuit

NOTE
Wire colors on each side of connector [53] do not match at terminals 10 and 11.
NO OR LOW AUDIO WITH HIGH OUTPUT AMPLIFIER: SYMPTOM 14

Inspect fuse to amplifier. Is fuse OK?

- **YES**
  - Disconnect Connector [149]. Install Breakout Box HD-44608. Measure Voltage Between Terminals 3 and 4 (+) and Between Terminals 20 and 21 (-) on Breakout Box HD-44608 (Black). Is Battery Voltage Present?
    - **YES**
      - Measure Voltage Between Y/O Terminal 1 (+) and Y/V Terminal 2 (-) on Breakout Box HD-44608 (Black). Voltage Should be 5 VDC. Is It?
        - **YES**
          - Go to NO OR LOW AUDIO WITH HIGH OUTPUT AMPLIFIER, Test 6.5n (Part 2 of 2).
        - **NO**
          - Replace fuse.
    - **NO**
      - Replace Radio.

- **NO**
  - Measure Voltage Between Terminals 20 and 21 to Ground on Breakout Box. Is Resistance Less Than One Ohm?
    - **YES**
      - Locate and Repair Open on R Wire Between Connector [149] and fuse or Between Fuse and Battery.
    - **NO**
      - Locate and Repair Open on BK Wire Between Connector [149] and Ground.

**NOTE**
See Diagnostic Notes on Page 6-61.

Confirm proper operation with no DTCs.
Table 6-40. FLHTCU Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[6]</td>
<td>Audio to Interconnect Harness</td>
<td>6-Place Deutsch (Black)</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[34]</td>
<td>Front Right Speaker</td>
<td>Spade Contacts</td>
<td>Inner Fairing - Back of Right Speaker</td>
</tr>
<tr>
<td>[35]</td>
<td>Front Left Speaker</td>
<td>Spade Contacts</td>
<td>Inner Fairing - Back of Left Speaker</td>
</tr>
<tr>
<td>[36]</td>
<td>Rear Right Speaker</td>
<td>Spade Contacts</td>
<td>Inside Speaker Box</td>
</tr>
<tr>
<td>[37]</td>
<td>Rear Left Speaker</td>
<td>Spade Contacts</td>
<td>Inside Speaker Box</td>
</tr>
<tr>
<td>[149]</td>
<td>High Output Amplifier</td>
<td>23-Place Amp</td>
<td>Under Luggage Rack (Right Side)</td>
</tr>
</tbody>
</table>
NO OR LOW AUDIO WITH HIGH OUTPUT AMPLIFIER: SYMPTOM 14

Disconnect Connector [27]. Install Breakout Box HD-47918 Leaving Radio Disconnected. Install Breakout Box HD-44608 to Harness Leaving Amplifier Disconnected. Measure Continuity Between Radio Breakout Box [27] Interconnect and Amplifier Breakout Box (Black Label) as follows:

<table>
<thead>
<tr>
<th>Breakout Box</th>
<th>Terminal</th>
<th>Connector</th>
<th>Terminal</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD-47918</td>
<td>[27]</td>
<td>[149]</td>
<td>[27]</td>
<td>[149]</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>18</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Left Speaker

Right Speaker

Is Resistance Less Than One Ohm?

YES

NO

Measure Continuity Between Terminals 16 and 17 (Left Speaker) or Between Terminals 18 and 1 (Right Speaker) on Breakout Box [27] Interconnect. Is Continuity Present?

YES

NO

Locate and Repair Short in Harness Between Terminals 16 and 17 (Left Speaker) or Between Terminals 18 and 1 (Right Speaker) in Harness From Amplifier [149B] to Radio [27B].

Locate and Repair Open Between Connectors [27B] and [149B].

Disconnect Breakout Box From Radio and Connect Connector [27]. Measure Voltage to Ground at Amplifier Breakout Box (Black), Left Speaker Terminals 18 or 11, or Right Speaker Terminals 19 or 12.

Less Than 4 VDC?

NO

4-8 VDC?

NO

Greater Than 8 VDC?

Locate and Repair Short to Voltage on Terminals 18 (GY/R) or 1 (LGN/BK) (Right Speaker) or on 16 (W/O) or 17 (LGN/W) (Left Speaker) in Harness From Amplifier to Radio.

Replace Radio.

Replace Amplifier.

Confirm proper operation with no DTCs.
HOME
Test 6.5o (Part 1 of 2)

NO OR LOW AUDIO FROM XM OR XM INOPERATIVE: SYMPTOM 15

Locate Vehicle in “Open Area” with Line of Site to Southern Sky.

Does XM Icon Appear on Radio Display When Moding Through Bands With Two or More Signal Bars Present on Display?

YES

NO

Does “Check Antenna” or “No Signal” Appear on Radio Display?

YES

NO

Disconnect Connector [28]. Install Breakout Box HD-42682 and Adapters HD-45325 to Connector [185]. Measure AC Voltage at Breakout Box (Black) Between Terminals 11 (-) and 12 (+). Voltage Should be 4-6 VAC. Is It?

YES

NO

Measure Voltage Between Breakout Box Terminals 11 (-) and 12 (+). Is Battery Voltage Present?

YES

NO

Replace XM Module.

Connect 35-pin connector HD-47918 Breakout Box to Radio and Harness in Fairing. Measure Continuity Between Terminal 8 on Connector [185B] and Terminal 10 on HD-47918 [28], Between Terminal 6 on Connector [185B] and Terminal 12 on HD-47918 [28] and also Between Terminal 7 on [185B] and Terminal 7 on HD-47918 [28]. Is Continuity Present?

YES

NO

Replace Radio.

Go to NO OR LOW AUDIO FROM XM OR XM INOPERATIVE, Test 6.5o (Part 2 of 2).

Locate and Repair Open on R, W or BK Wire Between Connectors [185B] and [28B].

Locate and Repair Open on Y/O or Y/V Wire Between Connectors [185B] and [28B].

Locate and Repair Open on BK/GN Wire Between Connector [185B] and Ground.

Locate and Repair Open on R/O Wire Between Connector [185B] and Radio Memory Fuse.

Locate and Repair Open on BK/GN Wire Between Connector [185B] and Ground.

NOTE
XM Available in U.S. Only.

Confirm proper operation with no DTCs.
Test 6.5o (Part 2 of 2)

NO OR LOW AUDIO FROM XM OR XM INOPERATIVE: SYMPTOM 15

From NO OR LOW AUDIO FROM XM OR XM INOPERATIVE, Test 6.5o (Part 1 of 2).

Measure Continuity Between Terminals 18, 30 and 7 on HD-47918 [28]. Is Continuity Present?

YES

Measure Continuity Between Terminals 18, 30 and 7 on HD-47918 [28] and Ground. Is Continuity Present?

YES

Measure Voltage Between Terminals 18, 30 and 7 on HD-47918 [28] and Ground. Is Voltage Greater Than 8 VDC Present?

YES

Replace XM Module.

NO

Locate and Repair Short Between R, W or BK Wires Between Connectors [185B] and [28B].

6157

Locate and Repair Short to Ground on R, W or BK Wires Between Connectors [185B] and [28B].

6157

Locate and Repair Short to Voltage on R, W or BK Wires Between Connectors [185B] and [28B].

6157

NOTE
XM Available in U.S. Only.

Confirm proper operation with no DTCs.

Table 6-41. FLHTCU Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[6]</td>
<td>Audio to Interconnect Harness</td>
<td>6-Place Deutsch (Black)</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[15]</td>
<td>Main to Interconnect Harness</td>
<td>4-Place Packard</td>
<td>Inner Fairing - Right Fairing Bracket</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[184]</td>
<td>CB Module</td>
<td>12-Place Mini-Deutsch</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[185]</td>
<td>XM Module</td>
<td>12-Place Mini-Deutsch</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
</tbody>
</table>
Figure 6-41. XM Circuit
Test 6.5p
XM - NO OR INTERMITTENT RECEPTION: SYMPTOM 16

Antenna Located in “Open Area” with Line of Site to Southern Sky?

YES

Are Metal Objects Obstructing Properly Installed Antenna?

YES

With Ignition ON, Measure Voltage at XM Antenna Connector at Back of XM Module Between Center Contact and Radio Case. Does Voltage Equal 4.25-4.75 VDC?

YES

Replace XM Module.

NO

Relocate Vehicle.

NO

Relocate Vehicle and/or Properly Install Antenna.

NO

Replace XM Antenna.

With Ignition OFF, Measure Resistance of XM Antenna at XM Antenna Connector Between Center Contact and Cable Shield. Does Resistance Equal 35-55 Ohms?

YES

Replace XM Module.

NO

Replace XM Module.

6126

6146

Confirm proper operation with no DTCs.
Verify Navigation CD is in Good Condition and Navigation Module is Properly Seated Onto Radio and Screws are Installed. Is Navigation CD in Good Condition and Module Properly Seated and Installed?

**YES**

- Press NAV Button on Radio With Power ON. Does the Radio Show Navigation Screen (i.e. Not the “Navigation is Not Installed” Screen)?

  **YES**

  - System OK.

  **NO**

  - Remove and Reinstall Module and Try Again.

  **YES**

  - Press NAV Button on Radio With Power ON. Does the Radio Show Navigation Screen (i.e. Not the “Navigation is Not Installed” Screen)?

    **YES**

    - System OK.

    **NO**

    - Replace Radio.

**NO**


  **YES**

  - Go to FM Radio Band. Enter Radio Test Menu (Softkey 1, Softkey 3 and OK Simultaneously). Use Arrow Down to Select Diagnostic Speed Type. Is Speed Type Correct?

    **YES**

    - Replace Navigation Antenna.

    **NO**

    - Replace Navigation Module.

  **NO**

- Go to FM Radio Band. Enter Radio Test Menu (Softkey 1, Softkey 3 and OK Simultaneously). Use Arrow Down to Select Diagnostic Speed Type. Is Speed Type Correct?

  **YES**

  - Press Arrow Down Until Diagnostic Speed Input Appears. If Stationary, Should Read 0. Ride Motorcycle Around Block With This Screen Showing (Monitor Both This Display and Speedometer). Does the Number on the Screen Increment?

    **YES**

    - Go to NAVIGATION INOPERATIVE, Test 6.5q (Part 2 of 2).

    **NO**

    - Did Speedometer Show Correct Speed?

      **YES**

      - Fix Speed Input.

      **NO**

- Measure Voltage at Navigation Antenna Connector at Back of Navigation Module Between Center Contact and Radio Case. Does Voltage Equal 4.5-5.3 VDC?

  **YES**

  - Measure Resistance at Navigation Antenna Connector Between Center Contact and Cable Shield. Does Resistance Equal 105K to 122K Ohm?

    **YES**

    - Replace Navigation Module.

    **NO**

    - Replace Navigation Module.

  **NO**

- Measure Resistance at Navigation Antenna Connector Between Center Contact and Cable Shield. Does Resistance Equal 105K to 122K Ohm?

  **YES**

  - Replace Navigation Module.

  **NO**

- Go to NAVIGATION INOPERATIVE, Test 6.5q (Part 2 of 2).

**Confirm proper operation with no DTCs.**
From NAVIGATION INOPERATIVE, Test 6.5q (Part 1 of 2).

Antenna Located in "Open Area" With Line of Site to Southern Sky?

- YES
  - Insert Navigation CD and Let it Load. Press OK When Prompted and Go to Save (Softkey 5). Press Softkey 4 (GPS). Observe Number of Satellites and Latitude/Longitude. Are There Any Satellites (May Have to Wait Up to 5 or 10 Minutes). Do You Have Any Satellites?
    - YES
      - Replace Navigation Module.
    - NO
      - Relocate Motorcycle.

- NO
  - Replace Navigation Module.

Confirm proper operation with no DTCs.
Go to FM Radio Band. Enter Radio Test Menu (Softkey 1, Softkey 3 and OK Simultaneously). Use Arrow Down to Select Diagnostic Speed Type. Is Speed Type Correct?

YES

Press Arrow Down Until Diagnostic Speed Input Appears. If Stationary, Should Read 0. Ride Motorcycle Around Block With This Screen Showing (Monitor Both This Display and Speedometer). Does the Number on the Screen Increment?

YES

Adjust AVC by Pressing “Audio +” Until One or More Bars are Present.

NO

Press “Change” at Softkey 4 Until Correct Speed Type is Displayed. Press “Exit” at Softkey 6 to Store Setting. Cycle Ignition Switch.

NO

See DTC U1016, J1850 LOST COMMUNICATIONS WITH ECM/ICM, Test 6.4a.

Confirm proper operation with no DTCs.
While Pressing Any Two Softkeys (Presets), Turn Ignition Switch ON to Enter Diagnostic Mode. Will Radio Enter Diagnostic Mode?

YES

Is Fault Present?

YES

NO

Replace Radio.

See DIAGNOSIS for applicable DTC:

<table>
<thead>
<tr>
<th>DTC</th>
<th>DESCRIPTION</th>
<th>GO TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2006</td>
<td>Radio Switches Stuck or Open</td>
<td>Replace Radio.</td>
</tr>
<tr>
<td>B2007</td>
<td>Handlebar Switches Shorted High</td>
<td>Test 6.2b (Part 1 of 3)</td>
</tr>
<tr>
<td></td>
<td>Audio</td>
<td>Test 6.2b (Part 2 of 3)</td>
</tr>
<tr>
<td></td>
<td>Mode</td>
<td>Test 6.2b (Part 3 of 3)</td>
</tr>
<tr>
<td>B2008</td>
<td>Handlebar Switches Shorted Low</td>
<td>Test 6.2c (Part 1 of 3)</td>
</tr>
<tr>
<td></td>
<td>Audio</td>
<td>Test 6.2c (Part 2 of 3)</td>
</tr>
<tr>
<td></td>
<td>Mode</td>
<td>Test 6.2c (Part 3 of 3)</td>
</tr>
<tr>
<td>B2009</td>
<td>Handlebar Switches Stuck or Open</td>
<td>Test 6.2d (Part 1 of 3)</td>
</tr>
<tr>
<td></td>
<td>Audio</td>
<td>Test 6.2d (Part 2 of 3)</td>
</tr>
<tr>
<td></td>
<td>Mode</td>
<td>Test 6.2d (Part 3 of 3)</td>
</tr>
<tr>
<td>B2010</td>
<td>Passenger Switches Stuck or Open</td>
<td>Test 6.2e (Part 1 of 2)</td>
</tr>
<tr>
<td></td>
<td>Audio/PTT</td>
<td>Test 6.2e (Part 2 of 2)</td>
</tr>
<tr>
<td>B2011</td>
<td>Passenger Switches Shorted Low</td>
<td>Test 6.2f (Part 1 of 2)</td>
</tr>
<tr>
<td></td>
<td>Audio/PTT</td>
<td>Test 6.2f (Part 2 of 2)</td>
</tr>
<tr>
<td>B2012</td>
<td>Passenger Switches Stuck or Open</td>
<td>Test 6.2g (Part 1 of 2)</td>
</tr>
<tr>
<td></td>
<td>Audio/PTT</td>
<td>Test 6.2g (Part 2 of 2)</td>
</tr>
<tr>
<td>B2013</td>
<td>Sidecar Switches Shorted High</td>
<td>Test 6.2h</td>
</tr>
<tr>
<td></td>
<td>PTT/Mode</td>
<td>Test 6.2i</td>
</tr>
<tr>
<td>B2014</td>
<td>Sidecar Switches Shorted Low</td>
<td>Test 6.2j</td>
</tr>
<tr>
<td></td>
<td>PTT/Mode</td>
<td>Test 6.2k</td>
</tr>
<tr>
<td>B2015</td>
<td>Sidecar Switches Stuck or Open</td>
<td>Test 6.2m</td>
</tr>
</tbody>
</table>

Depress applicable switch to verify handlebar, passenger and sidecar switch functionality:

- Audio Up
- Audio DN
- Audio Mode
- Mode Up
- Mode DN
- Mode PTT
- Squelch +
- Squelch -

The Display Will Show Each Function When Pressed. Does it?

YES

No Current Fault Found. Repeat Function Verification While Wiggling Harness.

NO

Which Switches Are Inoperative?

- Handlebar Switches
- Passenger Switches
- Sidecar Switches

Go to HANDLEBAR SWITCHES INOPERATIVE, Test 6.5s (Part 3 of 4).

Go to PASSENGER SWITCHES INOPERATIVE, Test 6.5s (Part 2 of 4).

Go to SIDECAR SWITCHES INOPERATIVE, Test 6.5s (Part 4 of 4).

Confirm proper operation with no DTCs.
From PASSENGER SWITCHES INOPERATIVE, Test 6.5s (Part 1 of 4).

Audio/PTT or Mode Switch Inoperative?

Audio/PTT Switch

Install Radio Breakout Box HD-47918. Is Resistance to Ground Less Than 5K Ohms on Terminals 11, 23, 34 and 35 on Connector [28]?

YES

Go to DTC B2011, PASSENGER AUDIO/PTT SWITCH SHORTED LOW, Test 6.2f (Part 1 of 2).

NO

Is Voltage Greater Than 8 Volts on Terminals 11, 23, 34 and 35 on Connector [28]?

YES

Go to DTC B2010, PASSENGER AUDIO/PTT SWITCH SHORTED HIGH, Test 6.2e (Part 1 of 2).

NO

Mode Switch

Install Radio Breakout Box HD-47918. Is Resistance to Ground Less Than 5K Ohms on Terminals 11, 12, 23 and 34 on Connector [28]?

YES

Go to DTC B2011, PASSENGER MODE SWITCH SHORTED LOW, Test 6.2f (Part 2 of 2).

NO

Is Voltage Greater Than 8 Volts on Terminals 11, 12, 23 and 34 on Connector [28]?

YES

Go to DTC B2012, PASSENGER MODE SWITCH STUCK OR OPEN, Test 6.2g (Part 1 of 2).

NO

Go to DTC B2010, PASSENGER MODE SWITCH SHORTED HIGH, Test 6.2e (Part 2 of 2).

NO

Go to DTC B2012, PASSENGER MODE SWITCH STUCK OR OPEN, Test 6.2g (Part 2 of 2).

NOTE
See Diagnostic Notes on Page 6-61.
Table 6-42. FLHTCU Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[22]</td>
<td>Interconnect Harness to Right Handlebar Switches</td>
<td>12-Place Deutsch (Black)</td>
<td>Inner Fairing - Fork Stem Nut Lock Plate (Left Side)</td>
</tr>
<tr>
<td>[24]</td>
<td>Interconnect Harness to Left Handlebar Switches</td>
<td>12-Place Deutsch (Gray)</td>
<td>Inner Fairing- Left Fairing Support Brace</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[41]</td>
<td>Rear Right Speaker/Passenger Controls</td>
<td>6-Place Mini-Deutsch</td>
<td>Inside Rear Right Speaker Box</td>
</tr>
<tr>
<td>[42]</td>
<td>Rear Left Speaker/Passenger Controls</td>
<td>6-Place Mini-Deutsch</td>
<td>Inside Rear Left Speaker Box</td>
</tr>
</tbody>
</table>
HANDLEBAR, PASSENGER OR SIDECAR SWITCHES INOPERATIVE: SYMPTOM 19

From HANDLEBAR SWITCHES INOPERATIVE, Test 6.5s (Part 1 of 4).

Audio, Mode or PTT/Squelch Switch Inoperative?

Mode Switch

Install Radio Breakout Box HD-47918. Is Resistance to Ground Less Than 5K Ohms on Terminals 3, 4, 5 and 6 on Connector [27]?

YES

NO

12

Go to DTC B2008, HANDLEBAR MODE SWITCH SHORTED LOW, Test 6.2c (Part 2 of 3).

Go to DTC B2007, HANDLEBAR MODE SWITCH STUCK OR OPEN, Test 6.2d (Part 2 of 3).

NO

12

Is Voltage Greater Than 8 Volts on Terminals 3, 4, 5 and 6 on Connector [27]?

YES

NO

12

Go to DTC B2007, HANDLEBAR AUDIO SWITCH SHORTED HIGH, Test 6.2c (Part 1 of 3).

Is Voltage Greater Than 8 Volts on Terminals 3, 8, 22 and 23 on Connector [27]?

YES

NO

12

Go to DTC B2008, HANDLEBAR AUDIO SWITCH SHORTED LOW, Test 6.2c (Part 1 of 3).

Go to DTC B2007, HANDLEBAR AUDIO SWITCH STUCK OR OPEN, Test 6.2b (Part 1 of 3).

NO

12

Go to DTC B2009, HANDLEBAR PTT/SQUELCH SWITCH STUCK OR OPEN, Test 6.2d (Part 3 of 3).

NOTE

See Diagnostic Notes on Page 6-61.
Figure 6-44. Handlebar Audio Switch Circuit

Figure 6-45. Handlebar Mode Switch Circuit

Figure 6-46. Handlebar PTT/Squelch Switch Circuit
Test 6.5s (Part 4 of 4)

HANDLEBAR, PASSENGER OR SIDECAR SWITCHES INOPERATIVE: SYMPTOM 19

With Key ON, Check for Voltage Between Terminals 11 (-) and 15 (+) at Breakout Box. Is Voltage Within Range for Each Function?

<table>
<thead>
<tr>
<th>Sidecar Button</th>
<th>Minimum Voltage</th>
<th>Maximum Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Press</td>
<td>2.13</td>
<td>2.48</td>
</tr>
<tr>
<td>Mode</td>
<td>1.88</td>
<td>2.21</td>
</tr>
<tr>
<td>PTT</td>
<td>1.66</td>
<td>1.94</td>
</tr>
<tr>
<td>Tune (+)</td>
<td>1.33</td>
<td>1.67</td>
</tr>
<tr>
<td>Volume (+)</td>
<td>0.90</td>
<td>1.33</td>
</tr>
<tr>
<td>Tune (-)</td>
<td>0.55</td>
<td>0.89</td>
</tr>
<tr>
<td>Volume (-)</td>
<td>0.33</td>
<td>0.54</td>
</tr>
</tbody>
</table>

**YES**
- Inspect Connectors [27], [53] and [197] for Corrosion. Is Corrosion Present?
  - **YES**
    - Replace Radio.
  - **NO**
    - Inspect Connectors [27], [53] and [197] for Corrosion. Is Corrosion Present?
      - **YES**
        - Clean or Repair Connector.
      - **NO**
        - Replace Sidecar Console Switch Assembly.

**NO**
- Go to DTC B2014, SIDECAR PTT/MODE SWITCH SHORTED LOW, Test 6.2i.
- Go to DTC B2013, SIDECAR PTT/MODE SWITCH SHORTED HIGH, Test 6.2h.

**Confirm proper operation with no DTCs.**

See Diagnostic Notes on Page 6-61.
Test 6.5t

CD SKIPPING: SYMPTOM 20

- CD in Good Condition and Properly Formatted?
  - YES
  - NO

Motorcycle Equipped With CB/Intercom?
- NO
- YES

Turn Off CB/Intercom. CD Still Skipping?
- YES
- NO

Are Handlebar Risers Contacting Bottom of Radio Chassis?
- YES
- NO

Loosen Radio Chassis and Realign to Provide Adequate Clearance.
- YES
- NO

Install Radio Breakout Box HD-47918. With Ignition and Radio ON, Measure Voltage Drop Between Battery Positive (+) and Terminals 10 (-) and 20 (-). Is Voltage Drop Greater Than 0.5 Volts?
- YES
- NO

Locate and Repair Source of Voltage Drop Between Battery Positive and Connector [27B].
- YES
- NO

With Ignition and Radio ON, Measure Voltage Drop Between Battery Negative (-) and Terminals 11 (+) and 19 (+). Is Voltage Drop Greater Than 0.5 Volts?
- YES
- NO

Locate and Repair Source of Voltage Drop Between Battery Negative and Connector [27B]. Closely Inspect Ground at Frame on Right Side of Steering Head, as this May be a Source of High Resistance.
- YES
- NO

Inspect Front Motor Mount. Is Front Motor Mount Damaged or Misaligned?
- YES
- NO

Align or Replace Front Motor Mount.
- YES
- NO

Do Exhaust System Mounts Allow Muffler to Isolate Vibration (Not Putting Exhaust in a Bind)?
- YES
- NO

Correct Exhaust Mount Alignment.

NOTE
See Diagnostic Notes on Page 6-61.
HANDS FREE PHONE MODULE INITIAL DIAGNOSTICS: SYMPTOM 21

Able to Mode to Phone?

- YES
  - Able to Pair Phone With Module?
    - YES
      - Go to INFO TAINMENT BUS LOST COMMUNICATIONS WITH HANDS FREE PHONE MODULE, Test 6.4d.
    - NO
      - Go to HANDS FREE PHONE MODULE - PHONE NOT PAIRING, Test 6.5u (Part 5 of 5).
  - NO

Able to Make/Receive Phone Calls on Radio?

- YES
  - Can They Hear You?
    - YES
      - Can You Hear Them?
        - YES
          - Go to NO OR LOW AUDIO TO HANDS FREE PHONE MODULE, Test 6.5u (Part 2 of 5).
        - NO
          - Go to NO OR LOW AUDIO FROM HANDS FREE PHONE MODULE, Test 6.5u (Part 3 of 5).
    - NO
      - Does Phone Book Download Completely?
        - YES
          - Name of Phone Service Provider Displayed?
            - YES
              - Is Signal Strength Displayed in Upper Right Hand Corner?
                - YES
                  - System OK.
                - NO
                  - Confirm proper operation with no DTCs.
            - NO
              - Some Phones or Sim Cards do not Support all Features.
        - NO
          - Confirm proper operation with no DTCs.

- NO
  - Is Phone Compatible? (See Phone Compatibility List on H-D Net.)
    - YES
      - Contact Cellular Provider Technical Service.
    - NO
      - Source Compatible Phone.

System OK.
NO OR LOW AUDIO TO HANDS FREE PHONE MODULE: SYMPTOM 21

Does Phone Icon Appear on Radio Display When Moding Through Bands?

YES

NO

Go to NO OR LOW AUDIO FROM MICROPHONES, Test 6.5m (Part 1 of 4).

Measure Voltage at Connector [1948] Between R/O Terminal 1 (+) and BK/GN Terminal 2 (-). Is Battery Voltage Present?

YES

NO

Measure Voltage Between Connector [1948] Y/O Terminal 17 (-) and Y/V Terminal 18 (+). Voltage Should be 4-6 VDC. Is It?

YES

NO

Replace Hands Free Phone Module.

Connect 35-pin connector HD-47918 Breakout Box to Radio and Harness in Fairing. Measure Continuity Between Terminal 17 on Connector [1948] and Terminal 13 on HD-47918 [28], and also Between Terminal 18 on Connector [1948] and Terminal 14 on HD-47918 [28]. Is Continuity Present?

YES

NO

Replace Radio.

Locate and Repair Open on Y/O or Y/V Wire Between Connectors [1948] and [28B].

Locate and Repair Open on R/O Wire Between Connector [1948] and Radio Memory Fuse.

Locate and Repair Open on BK/GN Wire Between Connector [1948] and Ground.

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

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NO

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NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

NO

Measure Resistance at Connector [1948], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?
Figure 6-47. Hands Free Phone Circuit

Table 6-43. FLHTCU Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[6]</td>
<td>Audio to Interconnect Harness</td>
<td>6-Place Deutsch (Black)</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[15]</td>
<td>Main to Interconnect Harness</td>
<td>4-Place Packard</td>
<td>Inner Fairing - Right Fairing Bracket</td>
</tr>
<tr>
<td>[27]</td>
<td>Radio</td>
<td>23-Place Amp</td>
<td>Inner Fairing - Back of Radio (Right Side)</td>
</tr>
<tr>
<td>[28]</td>
<td>Radio</td>
<td>35-Place Amp</td>
<td>Inner Fairing - Back of Radio (Left Side)</td>
</tr>
<tr>
<td>[187]</td>
<td>Hands Free Phone Module</td>
<td>12-Place Mini-Deutsch</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[194]</td>
<td>Hands Free Phone Module</td>
<td>54-Place Amp</td>
<td>Inside Tour-Pak (Left Side)</td>
</tr>
</tbody>
</table>
NO OR LOW AUDIO FROM HANDS FREE PHONE MODULE: SYMPTOM 21

Using Mode Switch, Will Radio Enter “Phone” Mode?

YES

Disconnect Connector [28]. Install Breakout Box HD-47918. Measure AC Voltage on Breakout Box [28], Between Terminals 4 and 27. Is Varying AC Voltage (0-5 VAC) Present While Voice Prompt is Responding?

YES

Measure Voltage at Connector [194B] Between R/O Terminal 1 (+) and BK/GN Terminal 2 (-). Is Battery Voltage Present?

YES

Measure Voltage Between Connector [194B] Y/O Terminal 17 (-) and Y/V Terminal 18 (+). Voltage Should be 4-6 VDC. Is It?

YES

Locate and Repair Open on R/O Wire Between Connector [194B] and Radio Memory Fuse.

NO

Measure Resistance at Connector [194B], Between BK/GN Terminal 2 to Ground. Is Resistance Less Than One Ohm?

YES

Locate and Repair Open on BK/GN Wire Between Connector [194B] and Ground.

NO

Locate and Repair Open on R/O Wire Between Connector [194B] and Radio Memory Fuse.

Replace Hands Free Phone Module

NO

Connect 35-pin connector HD-47918 Breakout Box to Radio and Harness in Fairing. Measure Continuity Between Terminal 17 on Connector [194B] and Terminal 13 on HD-47918 [28], and also Between Terminal 18 on Connector [194B] and Terminal 14 on HD-47918 [28]. Is Continuity Present?

YES

Replace Radio.

NO

Locate and Repair Open on Y/O or Y/V Wire Between Connectors [194B] and [28B].

Reconnect Connector [28]. Install Breakout Box HD-47918. Measure AC Voltage on Breakout Box [28], Between Terminals 4 and 27. Is Varying AC Voltage (0-5 VAC) Present While Voice Prompt is Responding?

NO

Go to NO OR LOW AUDIO FROM HANDS FREE PHONE MODULE, Test 6.5u (Part 4 of 5).

YES

Locate and Repair Open on R or BK Wire Between Connectors [194B] and [28B].

NO

Replace Hands Free Phone Module

NOTE

See Diagnostic Notes on Page 6-61.

Confirm proper operation with no DTCs.
Figure 6-48. Hands Free Phone Circuit
NO OR LOW AUDIO FROM HANDS FREE PHONE MODULE: SYMPTOM 21

Confirm proper operation with no DTCs.

Table 6-44. FLHTCU Wire Harness Connectors

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>[6]</td>
<td>Audio to Interconnect Harness</td>
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<td>[28]</td>
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<tr>
<td>[187]</td>
<td>Hands Free Phone Module</td>
<td>12-Place Mini-Deutsch</td>
<td>Inner Fairing - Top of Radio (Left Side)</td>
</tr>
<tr>
<td>[194]</td>
<td>Hands Free Phone Module</td>
<td>54-Place Amp</td>
<td>Inside Tour-Pak (Left Side)</td>
</tr>
</tbody>
</table>
Is Phone Compatible?

NOTE
Check phone compatibility at Harley-Davidson web page or see dealer for listing.

YES

Hands Free (Bluetooth) Enabled on Phone?

NO

Obtain Compatible Phone.

YES

Will Phone Locate Hands Free Phone Module?

NO

Enable Hands Free (Bluetooth) on Phone.

YES

System OK. Contact Cell Phone Provider Technical Support.

NO

Replace Hands Free Phone Module Antenna. Will Phone Locate Hands Free Phone Module?

YES

System OK.

NO

Replace Hands Free Phone Module.

Confirm proper operation with no DTCs.