# Technical Service Bulletin

| SUBJECT: **HANDS−FREE SYSTEM (BLUETOOTH/FUSE) INSTRUCTION GUIDE AND DIAGNOSTIC STEPS** | No: **TSB−12−54−012** |
| | DATE: **August, 2012** |
| | MODEL: **See below** |

| CIRCULATE TO: | [ ] GENERAL MANAGER | [ X ] PARTS MANAGER | [ X ] TECHNICIAN |
| --- | --- | --- | --- |
| [ X ] SERVICE ADVISOR | [ X ] SERVICE MANAGER | [ X ] WARRANTY PROCESSOR | [ X ] SALES MANAGER |

## PURPOSE

To provide service personnel a single source of information for the hands−free technologies (Bluetooth® Hands−free System, Fuse Hands−free Link System™) used in Mitsubishi vehicles (except Raider). This TSB provides additional guidance to help you understand, diagnose and repair these systems.

While this TSB focuses on Mitsubishi built models, many of the pairing and compatibility issues discussed here may help you with Raider Bluetooth questions and concerns.

## AFFECTED VEHICLES

| 2008−2013 Lancer | 2007−2013 Outlander | 2009.5−2012 Galant |
| --- | --- | --- |
| 2008−2013 Lancer Evolution | 2011−2013 Outlander Sport/RVR | 2010−2012 Eclipse |
| 2009−2013 Lancer Sportback | 2012−2013 i−MiEV | 2010−2012 Eclipse Spyder |
| | | 2010−2011 Endeavor |

## INTRODUCTION

This TSB provides a basic description of the hands−free systems used in Mitsubishi built vehicles. It covers components and operation, system layouts showing the differences in Japan built (Lancer models, Outlander, Outlander Sport/RVR, i−MiEV) and US built (Outlander Sport/RVR, Galant, Eclipse, Endeavor) vehicles, diagnostic flow charts, a list of commonly used acronyms and terms, and part numbers. It also provides a comprehensive Hands−free/Fuse Information Sheet to guide the service writer in getting complete and accurate details from the customer. With this information, dealer personnel can answer questions and conduct an efficient diagnosis to resolve customer concerns as quickly as possible.

Continued
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(3878)

# HANDS−FREE (BLUETOOTH/FUSE) DEFINITIONS

updated 5/08/12

| Term: | Definition: |
|---|---|
| A/V Navigation Unit | Audio/Video Navigation is incorporated into the MMCS display system |
| Acceptable Music File Formats | MP3, WMA, AAC, WAV |
| Active phone | A phone linked (connected) to the HFM and selected during start up. |
| Amplifier | A device that increases the sound level coming out of the radio before it gets to the speakers. Commonly called an "amp." |
| Antenna Amplifier | A roof antenna that receives and amplifies AM/FM and satellite radio signals. |
| AUX Box | Device that converts input from an audio jack into a signal that can be input into the the audio system. |
| AUX Streaming | Using the RCA or 1/8" auxiliary audio jacks to stream music to the vehicle via the audio system. |
| Bluetooth | A proprietary, open, wireless protocol for exchanging data over short distances. OR... The name of a wireless technology standard which allows different types of electronic devices to interact via short−range radio waves. |
| Bluetooth Streaming | Music is transmitted from a Bluetooth device to the hands−free module without a wired connection. |
| Bluetooth version 2.0 | Delivers data transfer rates up to three times faster than the original Bluetooth® specification. |
| CAN Box | Device that allows A/V Navigation unit to interface with other vehicle modules via the CAN Bus. |
| Center Panel Display | Information screen in the center of the dash that provides information to the driver. |
| Confirmation Function | Requests confirmation of a command before activating it. This decreases the chance of incorrect commands. May be enabled or disabled. |
| Controller | A device that receives inputs and provides outputs based upon pre−programmed logic. |
| Controller Area Network (CAN) | A communication network that allows multiple modules to share information with each other at high speeds. |
| DIN Cable | A multi−wired connection and cable with standards instituted by the German organization **D**eutsches **I**nstitut fur **N**ormung. |
| Dropped Call | During a conversation, the call is unexpectedly disconnected. |
| Enhanced Data Rate (EDR) | System that allows Bluetooth connection to make hands−free calls, play music and control a device connected via navigation system controls, unique audio controls, steering wheel switch or voice command. |
| External Interference | Electrical signals that may interfere with normal operation of the hands−free system and cause unwanted operation. A common cause may be the use of aftermarket electrical accessories such as GPS systems or charging systems for mobile devices. |
| Firmware | Computer programming instructions stored in read−only memory units rather than being implemented through software. |
| Fuse Hands−free Link System (Fuse) | A hands−free communication and entertainment interface that connects with Bluetooth compatible devices (mobile phones, music players) wirelessly or via USB connection. This system was first introduced on the 2010 Outlander. It includes voice−activated music and phone commands and can automatically sync phonebook contents from each paired phone. |
| Gracenotes | Technology for music file identification, intelligent play−listing and precise voice control over media. |
| Hands Free Module (HFM) | The control unit that operates the hands free system and connects to the mobile devices. |
| Hands−free Control Switches | Driver selectable buttons on the vehicle that are used to interface with the hands free system |
| Hands−free Interface Systems | A system that allows occupants to utilize their Bluetooth compatible mobile phone without holding it in their hand. |
| Hands−free System Information Sheet | A worksheet used when a hands−free system concern exists. Provides information on how to contact Johnson Controls Inc. and record the case number. |
| Hang Up Button | Button for ending a call or to refuse an incoming call. |
| Input | A signal going into a device. The block diagrams use the color blue to illustrate input devices. |
| JCI Case Number | Provided by Johnson Controls, Inc. A six digit number required on all warranty claims involving hands−free system repairs. |

# HANDS−FREE (BLUETOOTH/FUSE) DEFINITIONS

updated 5/08/12

| Term: | Definition: |
|---|---|
| Johnson Controls Inc. (JCI) | The company that produces the hands−free module and software. |
| Mitsubishi Multi Communication System | Incorporates functions such as navigation, audio, climate and other controls into one component with a touch screen user interface. |
| Mitsubishi Owner's Page | A page on the mitsubishicars.com website to assist owners with vehicle information, including the latest technology. www.mitsubishicars.com/owners |
| Multi−center Display | Information screen in center of dash that provides vehicle systems information to the driver. |
| Output | A signal going out of a device. The block diagrams use the color green to illustrate input devices. |
| Pairing | The act of linking a mobile phone or other wireless device to the vehicle's hands−free system. Typically up to 7 devices can be paired. |
| Passcode | A four digit number that must be provided to use the hands−free system IF the security function is enabled (Navi systems may have a manual input option). |
| Personal Identification Number (PIN) | A four digit number required to pair devices to the hands−free system. |
| Phone Compatibility | Determines whether a mobile phone is capable of interfacing with the hands−free system. |
| Phonebook function | The hands−free system can register up to 32 names and four phone numbers per name. This phonebook is not linked to the mobile phone's contacts. |
| Pickup Button | Button for answering an incoming call. May also be used to switch between two calls. |
| Registered Phone | When a mobile phone has been paired to a vehicle, it is considered registered. Typically, up to 7 phones can be registered. |
| Satellite Radio Receiver | Provides input to the audio system for satellite subscription services (e.g. SiriusXM). Sometimes abbreviated as sat. radio. |
| Speech Button (Voice Recognition − VR Button) | Press this button to change to voice recognition mode. Pressing the button briefly will interrupt the system prompts and allow voice command input. |
| Steering Wheel Audio Switches | Driver selectable buttons that interface with the radio to control functions such as volume and station selection |
| U−Connect | Found on Raider models, Uses Bluetooth technology to provide voice−controlled wireless communication between a compatible phone and the vehicle's onboard receiver. |
| Universal Serial BUS (USB) | A connector that provides compatible mobile devices a connection to the FUSE system. |
| USB 2.0 Spec. | Updated Universal Serial Bus protocol allowing much higher speeds than prior versions. |
| USB Memory Stick | Flash memory data storage device integrated with a USB interface. USB flash drives are typically removable and rewritable. They are physically much smaller than a CD. |
| USB Streaming | Using the USB connection in the vehicle to stream audio into the vehicle's sound system. |
| Voice Training | Allows the system to model an individuals voice characteristics and pronunciations making it easier for the hands−free system to recognize voice commands. |

## DESCRIPTION AND STRUCTURE

Bluetooth hands−free wireless technology is a global short range communications technology used to connect compatible devices without cables, while maintaining high levels of security.  Mitsubishi Motors first offered hands−free connection on the 2007 Outlander and by 2010 it was available throughout the model line.  Two different levels of hands−free technology are available on MMNA products:

1. Bluetooth Hands−free:  Hands−free connection to a compatible mobile phone that allows a user to make and receive calls using simple controls and voice commands.

   The handsfree system provides the ability to make and receive calls with a minimum of distraction.  The system features one touch answer and hangup as well as voice recognition.  A phone book feature provides for programming frequently called numbers and giving them convenient names (e.g "HOME").  To simplify the calling process, the user can make a call by saying the digits of the number to be dialed or a name from the phone book.  Calls are answered or ended by pressing a button placed within easy reach.

   System components include a hands−free module, control switches, and a microphone.  The system connects to the audio system and incoming dialog is heard through one of the speakers.

   Refer to the Owner's Manual for additional details and operational instructions.

2. Fuse Hands−free Link System™:  An advanced hands−free connection technology that offers all of the convenience of the basic hands−free system, and adds to wirelessly stream music to the audio system.  Once a compatible phone is paired (certain phones), it will self−connect when the ignition is turned to ACC or ON, and begin playing where it left off during Bluetooth streaming.  The system provides a USB port for wired streaming, giving a more reliable connection and allowing non−Bluetooth music players (e.g. iPod®) to stream music.

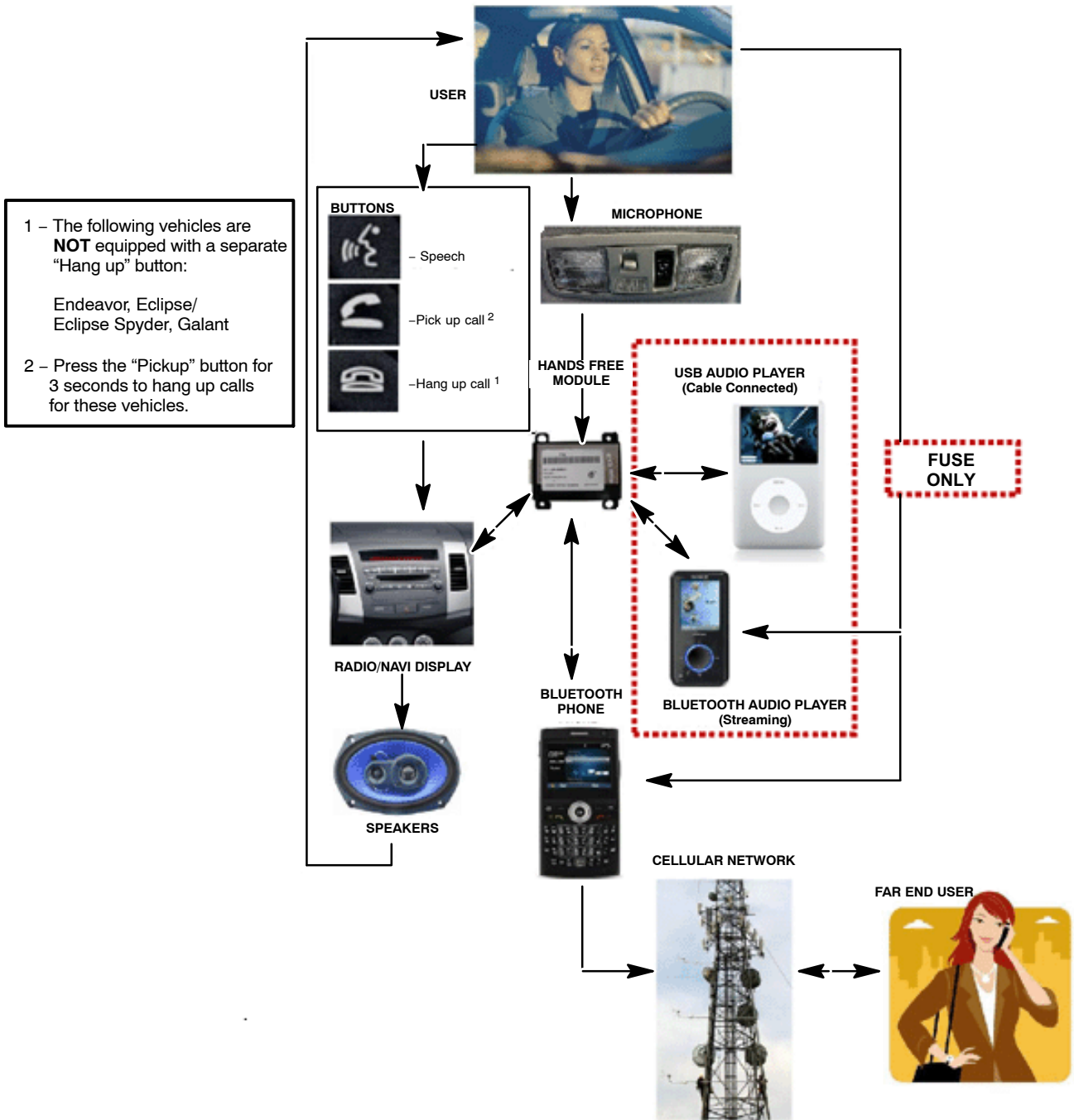   Some additional advantages of using the USB port:

   - The music player can be charged while connected (with some exceptions)
   - Provides the ability to catalog music via Grace Notes and display the title and artist via Metadata.

Customers can select and adjust music using the audio unit controls or, if connected via USB, voice commands.  Both systems support MP3, WMA, AAC, and WAV music files.  Refer to the Owner's manual and/or either of the following websites for additional information:

   ○ The owner's page on the Mitsubishi Motors website at:
     www.mitsubishicars.com/owners and select Technology Features.

   ○ Mitsubishi Service 411 at
     www.mservice411.com/c/technology−guide.

**NOTE:** Remote control capabilities are limited with some Bluetooth music players.

**THE HANDS−FREE (BLUETOOTH/FUSE) COMMUNICATION STRUCTURE**



USER

1 − The following vehicles are
**NOT** equipped with a separate
"Hang up" button:

Endeavor, Eclipse/
Eclipse Spyder, Galant

2 − Press the "Pickup" button for
3 seconds to hang up calls
for these vehicles.

**BUTTONS**

− Speech

−Pick up call [2]

−Hang up call [1]

**MICROPHONE**

**HANDS FREE
MODULE**

**USB AUDIO PLAYER
(Cable Connected)**

**FUSE
ONLY**

**RADIO/NAVI DISPLAY**

**BLUETOOTH
PHONE**

**BLUETOOTH AUDIO PLAYER
(Streaming)**

**SPEAKERS**

**CELLULAR NETWORK**

**FAR END USER**

## SYSTEM DIAGRAMS

The diagrams on the following pages show the general layout of model specific hands−free systems.

### Endeavor, Galant, Eclipse and Eclipse Spyder Models – Hands−free System



- ▬ Input
- ▬ Output
- ▬ Controller
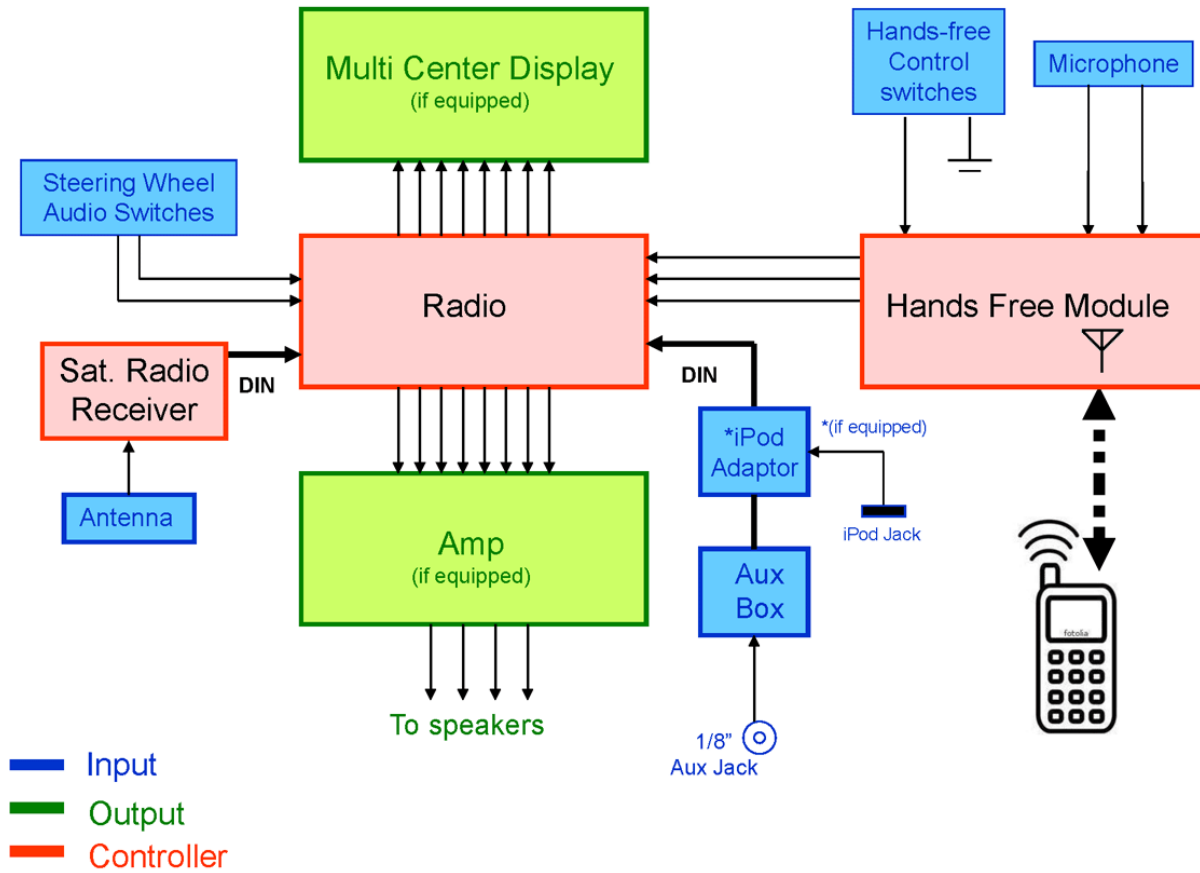
# Outlander and all Lancer Models − Hands−free System
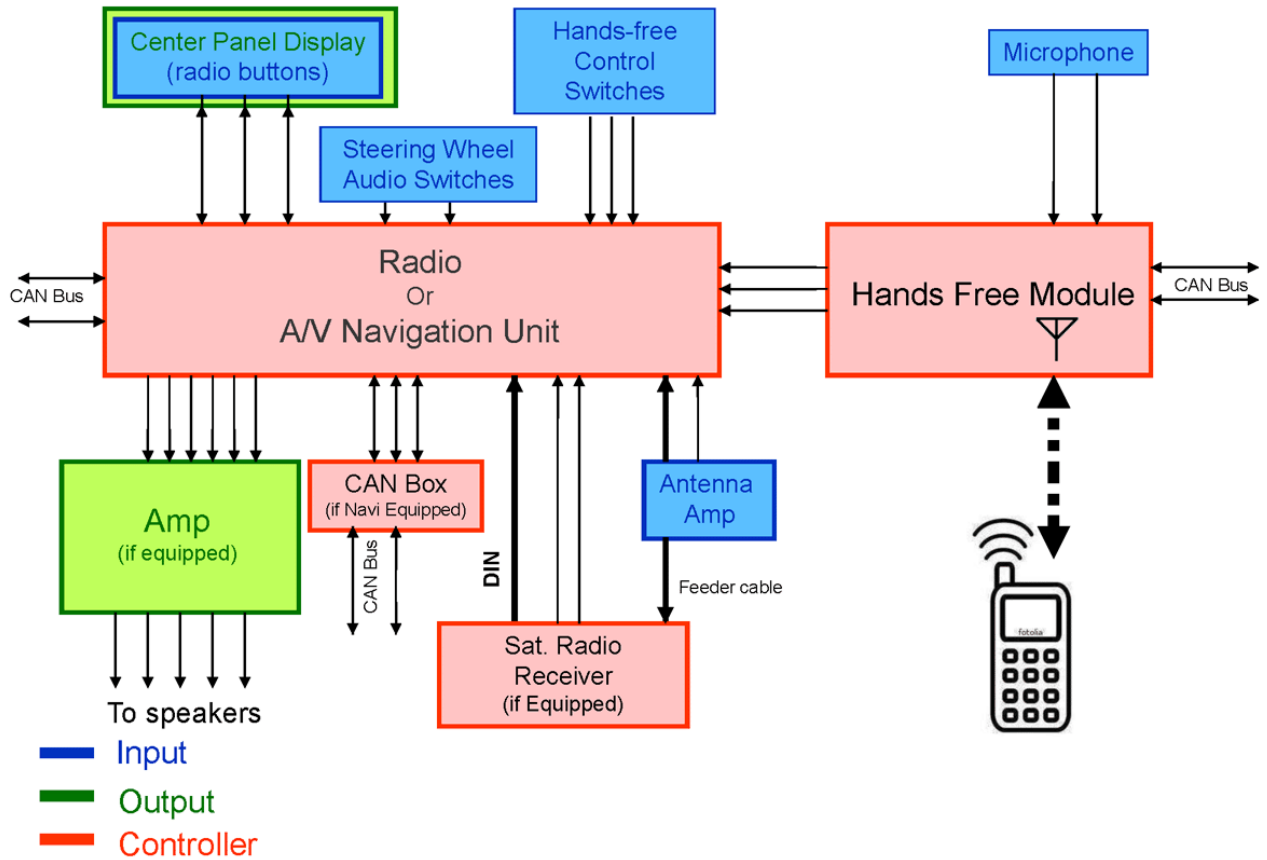
## IMiEV, Outlander, Outlander Sport/RVR and all Lancer Models − Fuse System
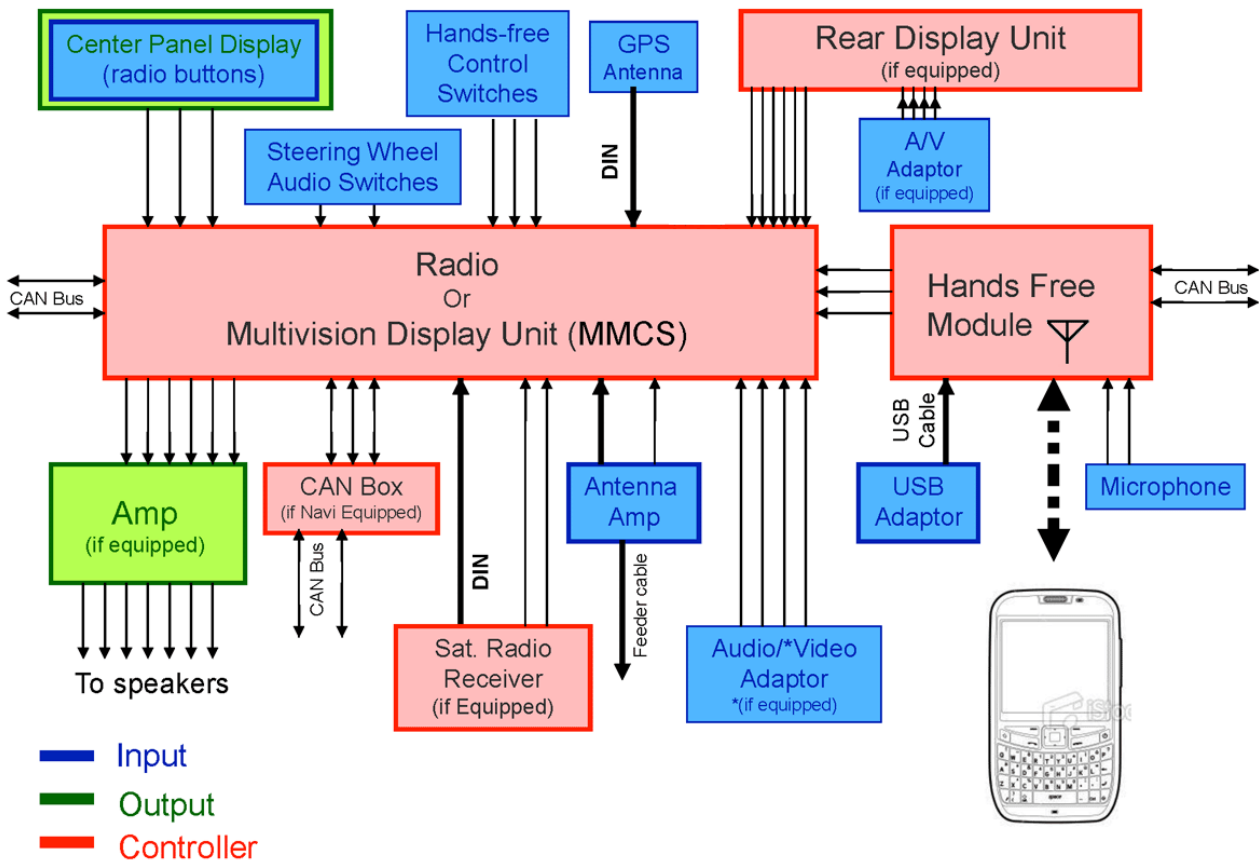
## HANDS−FREE CONTROLS
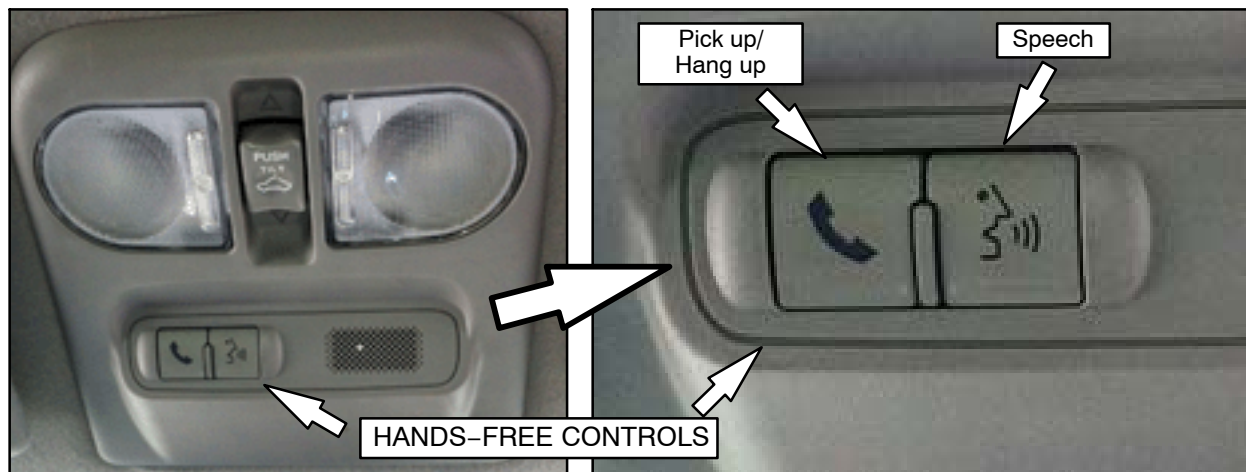
iMiEV, Lancer/Lancer Sportback, Lancer Evolution, Outlander, Outlander Sport/RVR through 2013 models.



Speech

Pick up

Hang up

HANDS−FREE CONTROLS
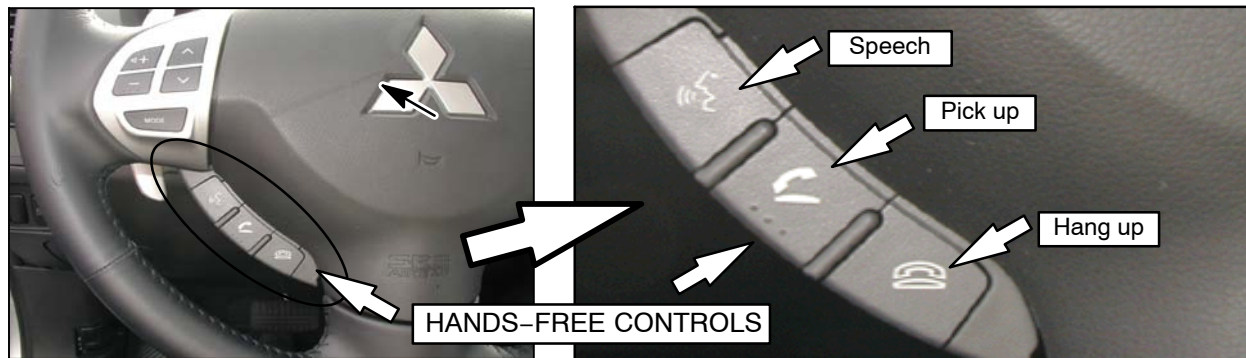
Endeavor, Galant located in overhead console (Eclipse models on dash above audio unit).



Pick up/
Hang up

Speech

HANDS−FREE CONTROLS

## SYSTEM IDENTIFICATION

The following chart identifies vehicle hands−free systems by model year.



| | MY07 | MY08 | MY09 | MY09.5 | MY10 | MY11 | MY12 | MY13 |
|---|---|---|---|---|---|---|---|---|
| **Bluetooth only vehicles:** Endeavor Galant Eclipse | No hands free systems | | | Galant only | Endeavor Galant Eclipse, Eclipse Spyder | | | |
| **Bluetooth and Fuse vehicles:** iMiEV Lancer Lancer Sportback Lancer Evolution Outlander Outlander Sport/RVR | Outlander only | All | | | Others / Outlander | All | | |

Key: Bluetooth | Fuse

## PARTS APPLICATION CHART

The following chart lists vehicle model and year for factory or port installed OEM hands−free modules.

| Standard Bluetooth (Non−Fuse) | | Part Numbers | |
|---|---|---|---|
| **Model Year** | **Model** | **O.E. Hands Free Module Part No.** | **HFM Accessory Installation Kit Part No.** |
| 2007 | Outlander | 8785A001* | MZ313819 |
| 2008 | Outlander, Lancer, Lancer Evolution | 8785A003* | MZ313819 |
| 2009 | Outlander, Lancer, Lancer Evolution | 8785A009* | MZ313819 |
| 2010 | Lancer, Lancer Sportback, Lancer Evolution | 8785A009* | MZ313819 |
| 2009.5 | Galant | 8785A005 | N/A |
| 2010 | Galant, Endeavor | 8785A005 | N/A |
| 2011 | Galant, Endeavor | 8785A029 | N/A |
| 2012 | Galant | 8785A009 | N/A |
| 2010 | Eclipse | 8785A007 | N/A |
| 2011−12 | Eclipse | 8785A033 | N/A |
| 2010 | Eclipse Spyder | 8785A008 | N/A |
| 2011−12 | Eclipse Spyder | 8785A034 | N/A |

* Service Part − 8785A028

| Fuse Hands Free Link System | | Part Numbers | |
|---|---|---|---|
| **Model Year** | **Model** | **Hands Free Module (Factory/Port)** | **HFM Accessory Installation Kit** |
| 2010 | Outlander | 8785A015, 8785A021 | MZ314354 |
| 2011 | Outlander, Lancer, Lancer Sportback, Lancer Evolution, Outlander Sport/RVR | 8785A025 ↓ | MZ314354 MZ314502 MZ314502 Included Included |
| 2012 | Outlander, Lancer, Lancer Sportback, Lancer Evolution, Outlander Sport/RVR, i−MiEV (SE only) | 8785A035, 8785A045 8785A035, 8785A045 8785A035, 8785A045 8785A035, 8785A045 8785A045 8785A045 | MZ314537 MZ314536 MZ314536 MZ314536 Included N/A |
| 2013 | Outlander, Lancer, Lancer Sportback, Lancer Evolution, Outlander Sport/RVR, i−MiEV (SE only) | 8785A045, 8785049, 8785A055 8785A055 ↓ | MZ314537 MZ314536 MZ314536 MZ314536 Included N/A |

## HANDS−FREE (BLUETOOTH/FUSE) DIAGNOSTIC PROCEDURE

**Identified Quality Concerns**

Before starting diagnosis, refer to the publication listed if you are diagnosing for any of these symptoms.

| Model | Symptom | Affected HFM Part Number | Countermeasure Part Number | Refer to Publication |
|---|---|---|---|---|
| 2007−08 Outlander, 2008 Lancer | Passcode reset not possible | 8785A001 | HFM p/n 8785A003 | TSB−07−54−005 |
| 2007−on Outlander 2008−on Lancer− based models | Paired phones randomly deleted | 8785A001 8785A003 8785A009 | HFM p/n 8785A028 | TSB−11−54−001 |
| 2010 −11 Fuse equipped models | Won't play music using a USB cable (iPhone or iPod w/ iOS 4.0 or higher) | 8785A015 8785A021 8785A025 | HFM update to p/n 8785A035, (software update to version 09.00.000) | TSB−11−54−007 |

**JCI – Johnson Controls, Inc.**

JCI is the Mitsubishi vendor for hands−free Bluetooth (except Raider) and the Fuse Hands−free Link System.

> **!!! IMPORTANT !!!**
> Contact JCI at (888) 702−4100 before performing diagnosis. You must have a JCI case number to submit warranty claims. Warranty repairs performed without a valid JCI case number being issued, or repairs that do not agree with JCI's instructions are subject to chargeback.

**Diagnostic Procedure**

Use the following steps when diagnosing JCI hands−free systems:

1.  Determine if the customer has contacted JCI and been issued a JCI case number. If not, you or the customer must first contact JCI.

    JCI will assist in troubleshooting the mobile phone/handset and assist the customer with phone compatibility and pairing questions. Once they determine the concern is not phone related and issue a case number, diagnosis of system components (module, audio unit, display unit, etc.) can begin.

2.  Complete the Hands−free (Bluetooth/Fuse) Information Sheet later in this TSB. Make sure you clearly understand the customer's description and comments before proceeding.

3.  Using the information sheet, attempt to recreate the customer's symptom(s):
    — Validate the operation of the customer's device on a known good vehicle.
    — Validate the operation of a known good device on the customer's vehicle.

    Once the issue is isolated to either the vehicle or the device, go to step 4.

4.  Refer to the "Hands−free/Fuse Symptoms and Possible Solutions" chart later in this TSB. The chart will instruct you to conduct specific tests.
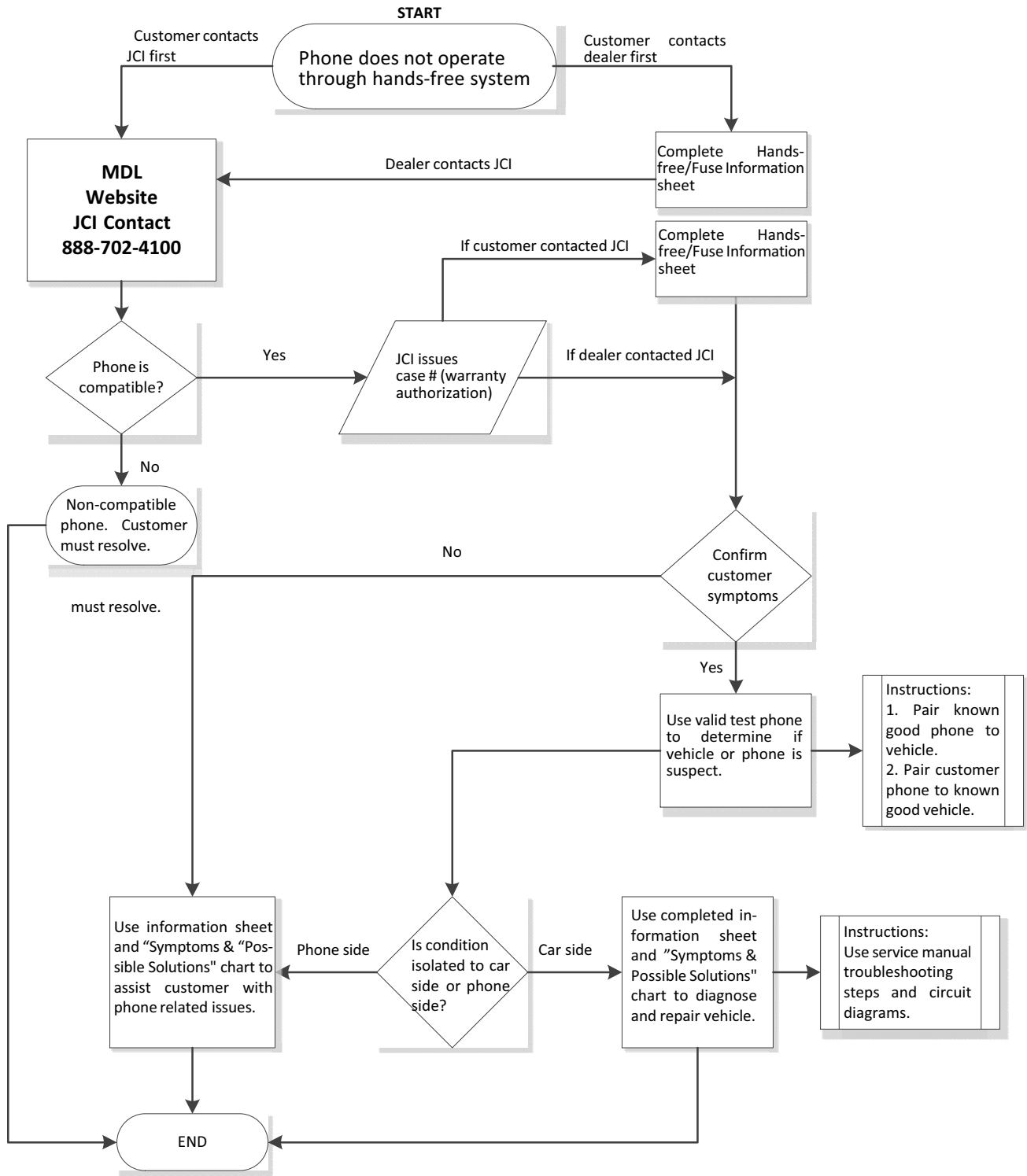
**Important Note:**

Mobile phone and vehicle testing must be done with a "known good" phone. The criteria are:

- The phone is on the JCI phone list found at www.mitsubishicars.com/owners.
- The phone pairs with a known good vehicle and functions normally.

**Reminder:** Every time the phone's software is updated, the phone must be retested to confirm it is still compatible with the hands−free system.

# HANDS-FREE (BLUETOOTH/FUSE) DIAGNOSTIC FLOW CHART

**START**

Phone does not operate through hands-free system

Customer contacts JCI first

Customer contacts dealer first

**MDL Website JCI Contact 888-702-4100**

Dealer contacts JCI

Complete Hands-free/Fuse Information sheet

If customer contacted JCI

Complete Hands-free/Fuse Information sheet

Phone is compatible?

Yes → JCI issues case # (warranty authorization)

If dealer contacted JCI

No

Non-compatible phone. Customer must resolve.

must resolve.

No

Confirm customer symptoms

Yes

Use valid test phone to determine if vehicle or phone is suspect.

Instructions:
1. Pair known good phone to vehicle.
2. Pair customer phone to known good vehicle.

Use information sheet and "Symptoms & "Possible Solutions" chart to assist customer with phone related issues.

Phone side

Is condition isolated to car side or phone side?

Car side

Use completed information sheet and "Symptoms & Possible Solutions" chart to diagnose and repair vehicle.

Instructions:
Use service manual troubleshooting steps and circuit diagrams.

END

# HANDS-FREE (BLUETOOTH/FUSE) INFORMATION SHEET
### *** Service Advisor, please provide a copy of this interview sheet to the technician***

**MITSUBISHI MOTORS**

**VEHICLE INFO:** VIN: _____  Year: _____  Model: _____  Mileage: _____

**CUSTOMER NAME:** _____  **Primary Driver:** ❏ No   ❏ Yes  **JCI Case Number:** _____

**PHONE INFO:** Phone Manufacturer: _____  Model: _____  Cellular Service Provider: _____

Device Software Version: _____  Bluetooth® Activated on Phone: ❏ No   ❏ Yes   Device Connecting to Vehicle: ❏ No   ❏ Yes

**A. What is the customers concern? (Check all that apply)**

1) ❏ Phone will not pair with hands-free system          2) ❏ A paired phone will not connect to hands-free system

3) ❏ Cannot place calls through hands-free system        4) ❏ Cannot receive calls through hands-free system

5) ❏ Poor audio quality                                   6) ❏ People tell me I sound bad or system sounds bad

7) ❏ Can hear person on other end but they can't hear me  8) ❏ Hands-free system redials wrong number

9) ❏ Hands-free system speech recognition is poor         10) ❏ Hands-free system will not dial the name given to it

11) ❏ Can't select phone in vehicle/incorrect phone selected  12) ❏ Pairing lost (phone no longer paired)

13) ❏ Hands-free system asking for a passcode             14) ❏ Call disconnects (drops) during conversation

15) ❏ No response when pressing speech button on vehicle  16) ❏ Music will not load when using USB connection

❏ Other (explain): _____

**B. When and where does the condition occur?**          ❏ Urban Areas          ❏ Rural Areas

Signal strength (# of "bars") during condition:  **1   2   3   4   5**

❏ During a phone call (after connection)    ❏ When I make a phone call (before connection)  ❏ When I answer a phone call

❏ When using one specific phone in the vehicle      ❏ With more than one paired phone in the vehicle at the same time

**C. How often does this occur?**

❏ Every time the system is used    ❏ Intermittently (please explain) _____

**D. How long have you experienced the condition?** _____

❏ Has always been with the vehicle    ❏ Appeared and gradually became more noticeable    ❏ Appeared suddenly

❏ Appeared after vehicle was serviced/repaired      ❏ Since I got this phone.

**E. Has this phone ever worked in this vehicle?**

❏ No        ❏ Yes

**E. Have you changed phones or carriers recently?**

❏ No        ❏ Yes    If yes, previous phone make/model: _____  Previous Cellular Provider: _____

**F. Have you updated your phone software recently?**

❏ No    ❏ Yes, (the condition occurred before and after the update)    ❏ Yes, (the condition only occurred after the update)

**G. Has the vehicle been serviced or repaired recently?**

❏ No        ❏ Yes    If yes, where?: _____

❏ Mechanical    ❏ Cosmetic    ❏ Accessories

Explain: _____

## PHONE TESTING AND DIAGNOSIS


Example

Use a Bluetooth compatible phone and applicable USB cable (see www.mitsubishicars.com/owners and select Technology Features for a list of compatible phones).

The USB cable may be phone specific. Use the cable recommended by the phone manufacturer.

| Phone Requirements | | |
|---|---|---|
| Capable of pairing to the hands−free system | Capable of Bluetooth Streaming Audio (Fuse Only) | USB capable (Fuse Only) |
| | | USB Cable (if applicable) |
| ✔ | ✔ | ✔ |

**Validation and Identification of Test Phone**

Prior to testing with a compatible phone, it must be paired to a known good vehicle and pass the following tests.

**Based on the customer's symptoms and the hands−free system, complete the following tests.**

| Test | Bluetooth Module Supported Test | FUSE | Bluetooth Hands−free |
|---|---|---|---|
| A | Pairing Bluetooth device and Bluetooth phone | ✔ | ✔ |
| B | Bluetooth Music Wireless Streaming | ✔ | **N/A** |
| C | USB Function | ✔ | **N/A** |
| **NOTE:** For AUX and RCA function issues, diagnose using the service manual. | | | |

If the phone passes all tests applicable to the vehicle's hands−free system, it is an acceptable test phone.

**!! IMPORTANT !!** − The test phone must be reconfirmed if its software is updated.

**Phone Test Preparation**

1.  Turn the phone on.

2.  Confirm the phone's Bluetooth connection is turned on.

3.  Remove all other Bluetooth devices (headphones, laptops, other phones, etc.) from the vehicle.

**Audio System Preparation**

1.  Turn the ignition switch to the ACC position.

2.  Turn on the audio system.

3.  Set mode to AM or FM

4.  Complete applicable procedures from charts A, B, or C that follow.

| | A − Pairing Bluetooth Phone to Vehicle<br>Outgoing/Incoming Call Function | | | |
|---|---|---|---|---|
| | Bluetooth Pairing Test | | | **Action** |
| **Step** | **Action** | **System Response** | **OK** | **NG** |
| | Turn ignition switch to ACC. Wait 20 seconds while system prepares for pairing. | None | ⇩ | See Service manual |
| 2 | Press the speech button. 〔🔊〕<br><br>After the beep, use the following verbal commands. Wait for a system response between commands. Say:<br>　• "Setup"<br><br>　• "Pairing options"<br><br>　• "Pair" | HFM − "Hands free system. Ready."<br>Fuse − "Link System Ready."<br><br><br><br><br>Responds with setup options.<br><br>Responds with pairing options. | ⇩ | Go to page 22, 23, or 26 |
| | **Endeavor/Eclipse/Galant Only**<br>　After saying "Pair," you hear the following:<br><br>　• "Continue" | **Endeavor/Eclipse/Galant Only**<br>"This operation should only be performed while the vehicle is parked. Please say continue to perform this operation." | | |
| | **All**<br><br>　• Say 4 digits that are easy to remember (e.g. 4 digit birthday, familiar number sequence, etc,)<br><br>　• "Yes" or "no" as appropriate (to confirm passcode). | **All**<br>　"Please say a 4 digit pairing code."<br><br>Repeats given passcode. "Is this correct?"<br><br><br><br>"Start pairing procedure on the device. "See the device manual for instructions." | | |
| 3 | 　• On the phone, enter the same 4 digit pairing code as above and press enter/pair.<br><br><br>　• Give the phone a name of your choosing (e.g. Mary's phone, Android 1, phone make/model)<br><br>　• "Yes" or "no" as appropriate (to confirm passcode). | **NOTE:** Hands−free Type Only: A message that pairing was unsuccessful may display. No action is required.<br><br>If the passcodes match; "Please say the name of the device after the beep." If they do not match, re−enter with correct passcode.<br><br>Repeats device name, "Is this correct?"<br><br>Hands−free Type Only − "Assign a priority between 1 and 7 where 1 is the phone used most often." | ⇩ | Go to page 27 |

| Step | Action | System Response | OK | NG |
|---|---|---|---|---|
| 3 (contd) | • Select priority based on who is most likely to use hands−free in the vehicle.<br><br>• "Yes" or "no" as appropriate (to confirm priority) | Repeats priority, "Is this correct?"<br><br><br>"Pairing complete" | | Go to page 27 |
| 4 | Test Outgoing Call<br>• Press and release the speech button.<br><br>Voice command:<br>• Say: "Dial."<br><br>• Example: "(123) 456−7890"<br><br>• Say: "Yes" or "no" as appropriate | "Link system"<br>or<br>"Phone connected/ready"<br><br>"Number please"<br><br>"Dialing (123) 456−7890. Is this correct?"<br><br>Ringtone is heard, pending answer from receiving end. | ⇩ | Go to page 25 |
| 4 | To end the call press the hang−up button:<br><br>Endeavor, Eclipse, Eclipse Spyder, and Galant (press and hold for 3 seconds)<br><br>Lancer, Lancer EVO, Outlander, and Outlander Sport/RVR (press and release). | <br><br><br><br><br><br><br><br><br>Call ends | ⇩ | Go to page 30 |
| 5 | Test an incoming call<br>• With the paired phone in the vehicle, call it from another location. | <u>Fuse:</u><br>Ringtone and voice prompt: "Incoming call, press the pick−up button to answer."<br><br><u>Hands−free type:</u><br>Voice prompt: "Incoming call, press the pick−up button/phone button to answer." | ⇩ | See service manual or go to page 26 |
| 6 | Use the vehicle controls to answer the test call.<br><br>A) Endeavor, Eclipse, Eclipse Spyder and Galant<br><br>Press and release the pick−up button to answer incoming call. | | ⇩ | Go to page 23−26 |

| Step | Action | System Response | OK | NG |
|------|--------|-----------------|----|----|
| 6 (cont) | B) <u>Lancer, Lancer EVO, Outlander, and Outlander Sport</u><br><br>Press and release the pick−up button to answer incoming call. | A clear connection with the caller indicates proper pairing, connection to the cell grid and control function.  Also confirms interaction with audio unit.<br><br>**<u>Note:</u>**<br>• Volume level may vary depending upon vehicle audio system settings. | ⇩ | Go to page 26 |
| 7 | Press the hang−up button to end the call.<br><br><u>Endeavor, Eclipse, Eclipse Spyder, and Galant (press and hold for 3 seconds)</u><br><br><u>Lancer, Lancer EVO, Outlander, and Outlander Sport (press and release)</u> | Call ends and a double beep is heard.<br><br>For diagnosing concerns with the vehicle hang up button, please refer to Service manual. | ⇩ | See service manual |

**NOTE:** Remember to delete your phone from the customer's phone list when all testing is completed.

- Press the speech button.
- Say "Setup."
- Say "Pairing Options."
- Say "Delete.
- Follow the spoken instruction to complete deletion.

Most phones have a maximum number of connections that can be stored.  You may want to delete the customer's vehicle from your test phone.  Refer to your phone's user's manual for instructions.

| B - Bluetooth® Music Streaming | | | | |
|---|---|---|---|---|
| (Pairing phone to vehicle is required prior to this test) | | | | |
| Phone pairing is <u>required </u>prior to testing Bluetooth Music Streaming.  If the test phone you are using is not paired to the vehicle, complete the pairing procedure earlier in this TSB. | | | **Action** | |
| Step | Action | System Response | OK | NG |
| 1. | Turn ignition switch to ACC. Wait 20 seconds while system prepares for pairing. | None | ⇩ | See Service manual |
| 2 | **VEHICLE SETTING:**<br><br>**[A] Radio**<br>Press the CD (Mode Change) button repeatedly until Bluetooth is displayed on the audio panel.<br><br><br>**[B] NAVI**<br>Press the Mode button (1) and then select "Bluetooth Audio" (2). | **[A]**<br>"B Connected" followed by BT Audio" is displayed on audio panel.<br><br><br><br>**[B]**<br>"Bluetooth Audio" will be highlighted on the navi display when selected.<br><br> | ⇩ | Go to page 22, 23 or see service manual |

| Step | Action | System Response | OK | NG |
|---|---|---|---|---|
| 3 | | Music player connects and music is heard.  **Note:** Volume level may vary depending upon vehicle audio system and music player. | ⇩ | Go to page Or see service manual |
| | OK − If Audio is heard through vehicle speakers. No quality concerns. | Operation complete | | |
| | NG − Audio is not heard through vehicle speakers. | Select different tracks to completely test Bluetooth streaming. For diagnosing concerns, please refer to the "Hands−free/FUSE symptom Based Diagnostics" in this TSB. | | |

**NOTE:** Remember to delete your phone from the customer's phone list when all testing is completed.

- Press the speech button.
- Say "Setup."
- Say "Pairing Options."
- Say "Delete.
- Follow the spoken instruction to complete deletion.

Most phones have a maximum number of connections that can be stored. You may want to delete the customer's vehicle from your test phone. Refer to your phone's user's manual for instructions.

| C − USB function | | Judgment | |
|---|---|---|---|
| **Note: Pairing the phone to the vehicle Bluetooth is not required for this test.** | | | |
| **Action** | **System Response** | **OK** | **NG** |
| 1 Turn the vehicle ignition key to the ACC position. Connect phone to USB port using the appropriate USB cable. | No response | ⇩ | See Service manual |
| 2 Place the vehicle in the USB mode.<br><br>• **Audio panel display** − Press and release the CD button until USB is displayed.<br><br>• **NAVI display** − Press the Mode button (1) and then select USB/iPod (2) screen selection. | <br><br><br>The vehicle's audio will begin playback to confirm that the USB is working properly.<br>**Note:**<br>The system will take some time to load depending on how much music is stored in the music player/device.<br><br>Select different tracks to completely test USB functions.<br><br>**Note:**<br>• Volume level may vary depending upon vehicle audio system settings.<br><br>• If you change from "streaming to "USB mode", it may be necessary to change the phone manually and confirm it set to "USB" . | ⇩ | Go to page 30 or see service manual |

## HANDS−FREE/FUSE SYMPTOMS & POSSIBLE SOLUTIONS

## Hands−free System Diagnosis Tables − by Symptom

| 1. PHONE WILL NOT PAIR WITH HANDS-FREE SYSTEM | | |
|---|---|---|
| **SYMPTOM QUESTIONS** | **POSSIBLE CAUSES** | **POSSIBLE SOLUTIONS** |
| Is the vehicle equipped with hands−free? | • Not installed. Steering wheel does not have control buttons. <br> • Vehicle is pre−wired for hands−free but is not equipped with hands−free system components. | • Vehicle requires installation of hands−free system components. |
| Do the phone and hands−free system have power? | Phone side: <br> • Cell phone turned off <br> • The phone may be discharged <br><br> Vehicle side: <br> • Open circuit in wiring to HFM. <br> • Ignition switch may be off. | • Turn phone ON. <br> • Recharge phone battery. <br><br> • Troubleshoot power circuit to HFM. <br> • Turn ignition to ACC or ON. |
| Is the phone's Bluetooth connection setting turned on? | • Bluetooth is not turned ON at the phone. | • Turn Bluetooth on at phone. (make sure the phone is not in airplane mode or turned off). See MMNA Instructions for phone pairing. |
| Is the phone compatible with the Mitsubishi hands−free system? | • Phone being used may not be compatible with the current Bluetooth version. | • Check the approved phones list at *(www.mitsubishicars.com/owners)* to see if phone is compatible. |
| Did the user follow the pairing instructions (both the phone side and the vehicle side)? | • User not following correct phone pairing procedures. <br><br><br> • User not following correct hands−free system pairing procedures. | • Use pairing instructions from either the vehicle owner's manual or follow the audio instructions given by the system. <br> • Use pairing instructions from the phone manufacturer's instructions (see Technology features at *(www.mitsubishicars.com/owners)*. |
| Where is the phone located during the pairing procedure? | • The phone is outside the vehicle. | • The hands−free system may not pair with a phone outside the vehicle. When pairing, make certain phone is inside the vehicle. |

| 1. PHONE WILL NOT PAIR WITH HANDS-FREE SYSTEM (cont'd) | | |
|---|---|---|
| **SYMPTOM QUESTIONS** | **POSSIBLE CAUSES** | **POSSIBLE SOLUTIONS** |
| Is the vehicle moving while pairing is attempted? | • Vehicle being driven. | • System does not allow pairing if vehicle is moving (applicable to all 2007−on Outlander, Lancer, Lancer Sportback, Lancer Evolution, and Outlander Sport/RVR) |
| Was the same four digit pin number used in both devices (phone and HFM). | • The four digit PIN entered into the phone does not match that entered into hands−free system. | • Use the same four digit PIN for both PIN requests. |
| Is the vehicle's Bluetooth system selected in the phone's settings (required with some phone models)? | • User has not selected the vehicle after pairing. | • Use phone settings to select the vehicle. |
| Hands−free system does not understand voice commands. | • System may need setting to customer's speech pattern. | • . |

## 2. A PAIRED PHONE WILL NOT LINK/CONNECT TO HANDS−FREE SYSTEM

| SYMPTOM QUESTIONS | POSSIBLE CAUSES | POSSIBLE SOLUTIONS |
|---|---|---|
| Phone icon not displayed and Bluetooth® device symbol not displayed on phone when a paired phone is ON and in the vehicle. Ignition is ON.<br><br>**EXAMPLES**<br>**Audio Panel**<br>Lancer, Lancer Evolution, Outlander, Outlander Sport/ RVR<br><br>**Bluetooth**<br>**Phone**<br><br>**Navigation Display**<br>Lancer, Lancer Evolution, Outlander, Outlander Sport/ RVR<br><br>**Bluetooth**<br>**Phone**<br><br>**Center Display**<br>Eclipse, Galant, Endeavor<br><br>3:10 OUTSIDE TEMP 82°<br>PHONE<br><br>**Navigation Display**<br>Galant and Endeavor<br><br>Phone | • Hands−free system and phone have not linked at startup.<br>• The phone is not set to automatically link/connect to the hands−free system.<br><br>• The hands−free system was not responding to the phone due to inadvertent phone handset action/button press.<br><br>• Phone is not compatible with the hands−free system.<br><br>Fuse Vehicles<br>• When multiple devices (phones, music players) are paired to the system, the most recently paired device will automatically connect.<br><br>Bluetooth Vehicles<br>• When multiple devices (phones, music players) are paired to the system, the device with the highest priority will automatically connect. | • Allow sufficient time for the HFM to initiate connection (30 sec. or more).<br>• Use the hands−free system Setup/ Select Phone/{Phone Name} command at the main menu to link to the desired phone.<br><br>• See the phone's user's guide for Bluetooth settings.<br><br>• Check for software revision to make the cell phone compatible with the HFM.<br><br>Fuse Vehicles<br>• Use voice command option to select desired phone.<br><br>Bluetooth Vehicles<br>• Use voice command option to override priority settings and select desired phone. |

| 3. CANNOT PLACE CALL THROUGH HANDS-FREE SYSTEM | | |
|---|---|---|
| **SYMPTOM QUESTIONS** | **POSSIBLE CAUSES** | **POSSIBLE SOLUTIONS** |
| Is the vehicle equipped with a hands−free system? | • Not installed. Steering wheel does not have control buttons.<br>• Pre−wired – Vehicle is pre−wired for hands−free but is not equipped with hands−free system components. | • Requires installation of hands−free system components.<br>• Check vehicle Monroney label for hands−free equipment.<br>• Press speech button and listen for ready response.<br>• Visually inspect for hands−free system components. |
| Is the phone turned on? | • The phone is turned off.<br>• Phone battery is discharged. | • Turn phone on.<br>• Charge phone battery. |
| Is there a signal? Is a signal strength icon displayed on the phone? | • User is in an area where there is no signal or weak signal. System responds with "cellular service not available" when trying to place a call. | • Move to and area where there is a stronger signal.<br>• Phone issues. |
| Is the vehicle ignition on? | • The ignition is turned off. | • Turn the ignition to ACC or ON. |
| Is phone paired to the hands−free system? | • Phone is not paired to the hands−free system. | • Pair phone to the hands−free system. |
| Does the user have an active mobile phone account for this phone? | • User does not have an active account for this phone. | • Sign up for cellular service. |
| Is there a response when pressing the speech button (should hear a ready response)? | • Phone volume set too low.<br>• Speaker not working.<br>• Speech button not working.<br>• Vehicle not equipped with an HFM. | • Set phone volume.<br>• Diagnose speaker and wiring.<br>• Diagnose speech button.<br>• Install HFM. |
| Can the hands−free system be heard through the speakers? | • Audio and/or HFM volume set too low.<br>• Phone not paired to vehicle.<br>• Phone paired, but not linked/connected to the hands−free system. | • Adjust Audio and/or HFM volume.<br>• Complete pairing procedure.<br>• Use the Setup/Select Phone/{Phone Name} command at the main menu to link to the desired phone. |

### 4. CANNOT RECEIVE INCOMING CALLS THROUGH HANDS-FREE SYSTEM
### Note: (Call comes in on phone only).  Phone was previously paired

| SYMPTOM QUESTIONS | POSSIBLE CAUSES | POSSIBLE SOLUTIONS |
|---|---|---|
| Is the vehicle ignition ON? | • The ignition is turned off. | • Turn the ignition to ACC or ON. |
| Is user pressing the pick−up button on hands−free system to answer the call? | • User pressing wrong button to answer call.<br><br>• Pickup button not operating correctly. | • Instruct the user to press the hands−free system's pickup button.<br>• Troubleshoot the pickup button. |
| Is the Bluetooth symbol displayed on the audio screen when the phone is in the vehicle? | • Possible phone compatibility issue. | • Check the approved phones list at *(www.mitsubishicars.com/owners)* to see if phone is compatible. |
| Is the phone paired and linked with the vehicle? | • Phone not paired and linked.<br>• Phone paired but not linked. | • See the phone user's guide and pairing instructions.<br>• Use the Setup/Select Phone/ {Phone name} command from the setup menu to link to the phone. |
| Where is the phone located? | • Phone is outside vehicle. | • Use phone inside the vehicle to ensure a good connection.  The hands−free system may not function if phone is outside of vehicle. |

### 5. POOR AUDIO QUALITY Vehicle Side Through Vehicle Speaker

| SYMPTOM QUESTIONS | POSSIBLE CAUSES | POSSIBLE SOLUTIONS |
|---|---|---|
| When using the phone with the hands−free system, does the incoming talk sound poor? | • Low signal strength because location is outside a strong signal area.<br>• Phone firmware issue. | • Have user check the signal strength indicator on the phone or the audio display.<br>• Verify the latest phone firmware version.  Contact JCI hands−free customer service at: 888−702−4100 |
| Is sound quality poor when using the cell phone by it-self? | YES:<br>• Poor audio due to phone or phone service. | • Confirm phone stand alone audio quality in several locations. |
| | NO:<br>• Speaker/amplifier issue. | • Diagnose for malfunctioning audio components (e.g. speaker, amplifier). |

## 6. PEOPLE TELL ME I SOUND BAD OR SYSTEM SOUNDS BAD

| SYMPTOM QUESTIONS | POSSIBLE CAUSES | POSSIBLE SOLUTIONS |
|---|---|---|
| Are you calling from a noisy environment (increased distortion)? | • Windows down.<br>• Very rough road.<br><br>• Blower fan on high speed.<br>• Other people talking loudly in background. | • Roll windows up.<br>• Avoid using hands−free when travelling on very rough roads.<br>• Turn blower fan speed down.<br>• A quiet environment may improve audio quality. |
| Why do people I'm talking to complain of too much distortion? | • Phone firmware issue. | • Verify the latest phone firmware. Contact phone provider/carrier. |
| Why am I told my voice sounds weak on the receiving end? | • Microphone not working properly. | • Poor installation.<br> • Wrong direction.<br> • Loose connection<br> • Faulty microphone |

## 7. CAN HEAR PERSON ON OTHER END BUT THEY CAN'T HEAR ME

| SYMPTOM QUESTIONS | POSSIBLE CAUSES | POSSIBLE SOLUTIONS |
|---|---|---|
| Why can't the person on the other end of the conversation hear me? | • Low signal strength.<br><br><br><br><br><br><br>• User has muted hands−free system.<br><br>• The microphone is missing not connected or faulty. | • Have user check the signal strength indicator on their phone and the Mitsubishi Multi−Communication System (MMCS) (if equipped).<br>• Avoid using the phone and hands−free system in areas where signal strength is poor and unable to provide a good conversation in both directions.<br>• Un−mute the system by saying "Mute off" while system is in use.<br>• Diagnose for faulty microphone and/or installation issues. |

## 8. HANDS−FREE SYSTEM REDIALS WRONG NUMBER

| SYMPTOM QUESTIONS | POSSIBLE CAUSES | POSSIBLE SOLUTIONS |
| --- | --- | --- |
| Why does the system dial the incorrect number when I ask it to redial? | • In between hands−free uses the user dialed a number from the phone.<br><br>• Phone is not re−dialing the last number. | • Hands−free re−dials the last dialed number stored in the phone. The last number dialed is not stored in the hands−free system.<br><br>• Phone firmware issue. Verify the latest phone firmware is being used. Contact provider/ carrier. |

## 9. HANDS-FREE SYSTEM SPEECH RECOGNITION IS POOR

| SYMPTOM QUESTIONS | POSSIBLE CAUSES | POSSIBLE SOLUTIONS |
| --- | --- | --- |
| Why does the hands−free system mis−recognize commands and/or digits? | • Noisy environment.<br><br>• Windows rolled down.<br>• Very rough road.<br><br>• Blower fan on high.<br><br>• Other people talking loudly in background. | • Move to a quieter environment.<br><br>• Roll windows up.<br><br>• Avoid using hands−free when travelling on very rough roads.<br>• Turn blower fan speed down.<br><br>• A quiet environment may improve audio quality. |
| | • After the SPEECH button is pressed, user speaks before the beep. | • Speak only after the beep is heard. |
| | • User speaks too slowly.<br>• User speaks too loudly.<br>• User speaks too softly. | • Speak normally (as you would using just the handset.) |
| | • Strong accents may affect voice recognition capability. | • Suggest user perform the Speaker Enrollment Feature in the hands−free system. |

## 10. HANDS−FREE SYSTEM WILL NOT DIAL BY NAME

| SYMPTOM QUESTIONS | POSSIBLE CAUSES | POSSIBLE SOLUTIONS |
| --- | --- | --- |
| Why won't the system dial the number when I try to dial by name? | • Name not stored in hands−free system phonebook. | • Name must be stored in the hands−free system phonebook. |

## 11. CAN'T SELECT PHONE IN VEHICLE/INCORRECT PHONE SELECTED

| SYMPTOM QUESTIONS | POSSIBLE CAUSES | POSSIBLE SOLUTIONS |
|---|---|---|
| Why can't I select a specific phone when multiple phones are paired? | • Phone is off.<br>• Phone is not paired to the hands−free system.<br>• Phone is paired but not selected for connection to the hands−free system. | • Turn phone on.<br>• Pair phone to the system.<br>• Say "Setup, Select Phone, Phone list {Phone Name}." If the name of the phone is unknown, say "Setup, Select Phone, List Phones" to hear a list of paired phones. |

## 12. PAIRING LOST (PHONE PREVIOUSLY PAIRED)

| SYMPTOM QUESTIONS | POSSIBLE CAUSES | POSSIBLE SOLUTIONS |
|---|---|---|
| Why does a paired phone intermittently lose pairing to the system? | • Flash file is corrupted. | • Refer to TSB−11−54−001 and install countermeasure HFM. |

## 13. HANDS−FREE SYSTEM ASKING FOR A PASSCODE

| SYMPTOM QUESTIONS | POSSIBLE CAUSES | POSSIBLE SOLUTIONS |
|---|---|---|
| Why is the hands−free system asking for a pass code? | • The HFM is locked due to a pass code being input. Customer does not remember pass code.<br><br>• Vehicle may be equipped with early HFM. No pass code reset is possible | • Use the reset procedure described in Group 54 – Chassis Electrical of the service manual to reset the HFM.<br>• Replace the HFM with a newer version with reset capability. |

## 14. CALL DISCONNECTS (DROPS ) DURING CONVERSATION

| SYMPTOM QUESTIONS | POSSIBLE CAUSES | POSSIBLE SOLUTIONS |
|---|---|---|
| Why are my calls dropped? | • Out of tower range (signal strength low).<br><br><br>• Phone battery charge is low. | • Check signal strength (# of bars) displayed on vehicle display and phone.  If one bar or less, calls may drop due to weak signal.<br>• Charge phone. |

| 15. THERE IS VISUAL RESPONSE (AUDIO UNIT) BUT NO AUDIO RESPONSE | | |
|---|---|---|
| **SYMPTOM QUESTIONS** | **POSSIBLE CAUSES** | **POSSIBLE SOLUTIONS** |
| Why is there no audio response from the hands−free system when the speech button is pressed, but I see "Listening" on the audio display? | • The system volume is set too low. | • Increase system volume after pressing the SPEECH button. |
| | • The wiring from the hands−free module to the Radio and CD Player or Navigation unit is loose, missing, or mis−wired. | • Diagnose using the appropriate wiring diagram. |
| | • Wiring from the audio amplifier to the speaker is loose, missing, or mis−wired. | • Diagnose using the appropriate wiring diagram. |
| | • The hands−free module may be faulty. | • Test using a known good HFM. |

| 16. MUSIC WON'T LOAD WHEN USING THE USB CABLE | | |
|---|---|---|
| **SYMPTOM QUESTIONS** | **POSSIBLE CAUSES** | **POSSIBLE SOLUTIONS** |
| Why does music not load when using the USB cable, even though I see "Loading" on the audio screen? | • Possible software issue between the hands−free module and music player. | • Refer to TSB−11−54−007. Verify Fuse software version and update if necessary. |
| | • Music player may be too old to work with the system. | • Obtain a newer model music player. |
| | • Defective or incompatible USB cable. | • Test using a known good USB cable. |
| | • Music player settings are not correct. | • Confirm or change music player settings to work with the system. |

## WARRANTY INFORMATION

This bulletin provides technical information only.