



VEHICLE MRI™

USER GUIDE



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Introduction

Thank you for choosing VehicleMRI.

Using this Guide

This manual contains instructions to assist you with the basic operating functions of the Mini Bluetooth® (MBT) vehicle communication interface.

The MBT

The MBT is the vehicle communication interface required for VehicleMRI. It is paired to an Android/Apple smartphone or tablet via Bluetooth allowing communication between the vehicle ECU and the mobile application.

Power Sources

The MBT is powered while plugged into the vehicle OBD-II port, a.k.a., data link connector (DLC).

⚠ WARNING: DO NOT LEAVE THE MBT PLUGGED INTO THE DLC FOR EXTENDED PERIODS OF TIME, AS THE VEHICLE BATTERY VOLTAGE MAY DROP BELOW PROPER CRANKING LEVEL.

Safety Information

For your safety, read this manual thoroughly before operating your inspection tool. Always refer to and follow safety messages and test procedures provided by the manufacturer of the vehicle being tested.

The safety messages presented below help prevent personal injury and equipment damage and are reminders to the operator to exercise extreme care when using this inspection tool.

Save This User Guide

For your safety, read all instructions. Use your inspection tool only as described in this user guide. For additional information, please contact DENSO.

Safety Instructions

1. Do not insert the MBT into the vehicle OBD-II port while the ignition is "ON."
2. Do not submerge the MBT in liquids.
 - a. If liquids should enter the MBT, disconnect the MBT from OBD-II connector and contact tech support.
 - b. Do not expose the MBT to rain or moisture.
 - c. Do not place the MBT interface outdoors.
3. Do not drive the vehicle while the MBT is plugged in the OBD-II port.
4. Always remove the MBT after completing a vehicle scan.

Setting up the MBT

Before using VehicleMRI, the application will need to discover the MBT through the Android/Apple smartphone or tablet (device) Bluetooth connection.

Vehicle-Side Setup

1. Plug the MBT into the DLC of the vehicle that has a charged battery and note the serial number on the label.
2. Turn the ignition switch to the ON position.

Android or Apple Device (Smartphone/Tablet) Setup

Prerequisites

1. Confirm the device's battery is fully charged.
2. Confirm your device has at least 300MB of internal storage space and at least 2GB of RAM.
3. Enable the Bluetooth and Locations Service on the Android or Apple device.
4. Download and install the VehicleMRI application from the Google Play store for Android or the App Store for iOS.
 - a. Open the VehicleMRI application and log in with your User Name (email address) and Password.
 - b. Don't have an account? Click on "sign up" and follow the instructions to sign up for a subscription.
5. Selecting the MBT Interface in the app
 - a. Android:
 - i) Select the "Menu" button on the top left.
 - ii) Select "Settings".
 - iii) Under the "DEVICE" tab, select the MBT serial number from the list.
 - iv) You are now ready to scan a vehicle.
 - b. Apple:
 - i) Select "Devices".
 - ii) Select the MBT serial number from the list.
 - iii) You are now ready to scan a vehicle.

Typical Operation

Paired Bluetooth® Device

Once the MBT has been selected within the VehicleMRI application, a “request to pair” with the Host device (smartphone/tablet) will appear during the first scan.


































Scanning with VehicleMRI

Plug the MBT into the vehicle DLC. Follow the setup instructions in VehicleMRI to discover and connect to your MBT. The MBT LED indicators will begin to change color and flash to show the communication status.

| Definition | |
|------------|---------------------------------|
| V | Vehicle |
| B | Bluetooth |
| H | Host Device (smartphone/tablet) |



| LED Patterns | |
|---|------------------|
|  | OFF |
|  | ON |
|  | ON Slow Blinking |
|  | ON Fast Blinking |

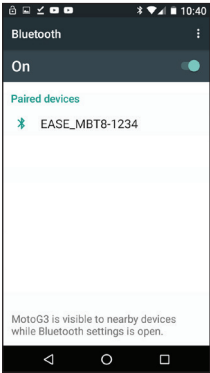
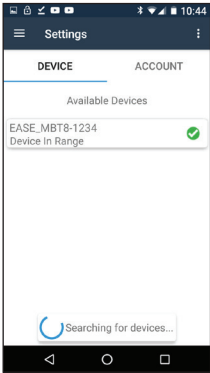
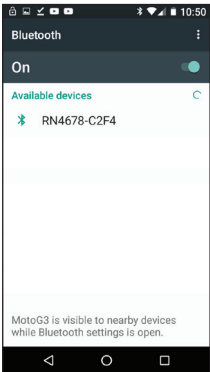

| Operations | LED State | V | B | H |
|-----------------------|--|---|---|---|
| Power OFF | All three LED's are not illuminated. |  |  |  |
| Power ON Startup | 1. V is Solid Red, B is OFF and H is Solid Amber. |  |  |  |
| | 2. V is Solid Green, B is OFF and H is Solid Amber. |  |  |  |
| | 3. V is Solid Red, B is Slow Blink Blue and H is Solid Amber. |  |  |  |
| | 4. V is Solid Amber, B is Slow Blink Blue and H is Solid Amber. |  |  |  |
| | 5. V is Solid Red, B is Slow Blink Blue and H is Solid Red. |  |  |  |
| Power ON Standby Mode | V is Solid Red, B is Slow Blink Blue and H is Solid Red. |  |  |  |
| Vehicle Scanning | 1. V is Solid Red, B is Fast Blink Blue and H is Fast Blink Green. |  |  |  |
| | 2. V is Solid Red, B is Fast Blink Blue and H is OFF. (Normally waiting for user input.) |  |  |  |
| | 3. V is Solid Red, B is Fast Blink Blue and H is Fast Blink Green. |  |  |  |
| | 4. V is Fast Blink Red, B is Fast Blink Blue and H is Fast Blink Green. |  |  |  |

Typical Operation CONTINUED

VehicleMRI Cannot Detect the MBT Vehicle Interface



















If the MBT vehicle interface experiences a reset condition, the device name detected by Bluetooth in your smartphone or tablet will revert to a factory default name and will not communicate with the VehicleMRI application.

Examples of the situation are summarized in the table below:

| Operation | MBT Vehicle Interface Name | VehicleMRI Application |
|-------------------------|---|---|
| <p>Normal</p> | <p>Example: EASE_MBT9-1234</p>  <p>NOTE: The last 4 digits ("1234") are the last 4 digits of your MBT serial number.</p> | <ul style="list-style-type: none"> • Can connect to the MBT vehicle interface and scan vehicles.  |
| <p>Abnormal (Reset)</p> | <p>Example: RN4678-C2F4</p>  <p>NOTE: As a result of a reset, the MBT will present a default name to VehicleMRI application.</p> | <ul style="list-style-type: none"> • Does not detect the MBT vehicle interface because the name has changed. • Cannot connect to the MBT, hence unable to scan a vehicle.  <p>NOTE: It is possible to use the Bluetooth detection in the smartphone or tablet to find the MBT, but the application will not connect.</p> |

Typical Operation CONTINUED

MBT LED Pattern after a Factory Reset Occurs:

| Operation | LED State | V | B | H |
|---|---|---|---|---|
| Power ON Standby Mode | V is Solid Red, B is Slow Blink Blue and H is Solid Red. |  |  |  |
| MBT Error ON Startup (Call Tech Support) | 1. V is Solid Red, B is OFF and H is Solid Amber. |  |  |  |
| | 2. V is Solid Green, B is OFF and H is Solid Amber. |  |  |  |
| | 3. V is Solid Red, B is Slow Blink Blue and H is Solid Amber. |  |  |  |
| | 4. V is Solid Amber, B is Slow Blink Blue and H is Solid Amber. |  |  |  |
| | 5. V is Solid Red, B is Slow Blink Blue and H is Solid Red. |  |  |  |

What To Do if a Factory Reset Occurs

Contact DENSO technical support to confirm the failure and determine disposition.

General Troubleshooting

MBT to Vehicle Troubleshooting Guide

| Step | Failure | Communication | Problem Area | Verification | Resolution |
|------|---|---|---|---|--|
| 1 | Vehicle Interface not found in the "DEVICE" menu option | Prerequisite: MBT to Host device (Android or Apple smartphone/tablet) | Distance to the MBT | Verify the Android/Apple device is located within twenty (20) feet from the MBT. | If not, move closer and try connecting to the MBT. Otherwise, go to Step 2. |
| 2 | | Prerequisite: MBT to Host device (Android or Apple smartphone/tablet) | Vehicle: Ignition Switch Position | Verify the Ignition Switch is in the ON position. | If not, turn the Ignition Switch to the ON position and try connecting to the MBT. Otherwise, go to Step 3. |
| 3 | | MBT to Vehicle | Power to MBT | Verify the MBT LED's are illuminated with the proper "Power ON Standby Mode" (refer to the chart in the "Typical Operation Section"). | If the LED's are not illuminated per the Power ON Standby Mode, go to Step 4. Otherwise, to Step 7. |
| 4 | | MBT to Vehicle | DLC Fuse | Verify the fuse for the DLC is not open. | If the fuse is open, replace it and try connecting to the MBT. Otherwise, go to Step 5. |
| 5 | | MBT to Vehicle | DLC Damaged | Confirm the following on the DLC: 1. Broken Pin(s)? 2. Missing Battery Power Pin? 3. Open/Shorted Wire(s)? | Repair any damage to the DLC and try connecting to the MBT. Otherwise, go to Step 6. |
| 6 | | MBT to Vehicle | Connect the MBT to a known good vehicle | Confirm the LED's illuminate per the "Power ON Standby Mode" (refer to the chart in the "Typical Operation Section"). | If the MBT LEDs are illuminated, try connecting to the MBT. Otherwise, go to Step 10. |
| 7 | | MBT to Vehicle | Low battery in vehicle | Verify the battery voltage is 10 volts or higher. | If under 10 volts, charge or replace the battery and try connecting to the MBT. Otherwise, go to Step 8. Note: The MBT may be powered at 10 volts, however, the vehicle may not start at low voltage levels. |
| 8 | | Prerequisite: MBT to Host device (Android or Apple smartphone/tablet) | Bluetooth | Verify the Bluetooth is turned ON in the Host device. | If disabled, swipe down from the top of the Android or Apple device and turn ON Bluetooth, then try connecting to the MBT. Otherwise, go to Step 9. |
| 9 | | Prerequisite: MBT to Host device (Android or Apple smartphone/tablet) | Serial number of MBT | Verify the serial number displayed on the VehicleMRI application matches the serial number on the MBT label. | On the Application, go to the DEVICE option under the settings menu, and confirm that the MBT serial number (Device in Range) that is connected to the vehicle DLC, has a green check mark next to it. Otherwise, click on the serial number. When the serial number is incorrectly displayed or is not displayed, go to Step 10. Note: When the MBT has not yet been paired to the Host device, go to the main landing page, start a scan and follow the Bluetooth instructions. |
| 10 | | Contact Tech Support 1-877-675-5463 and let them know your troubleshooting results. | | | |

General Troubleshooting CONTINUED

Host Device Troubleshooting Guide

| Item | Failure | Problem Area | Verification | Resolution |
|------|---|---|--|---|
| 1 | Unable to download the VehicleMRI application from the Google Play store for Android or App Store for iOS | Internet connection | Verify the following: 1. Device has internet connection via WiFi or Data Plan. 2. The throttle (Android)/Low Data Mode (Apple) setting is turned OFF. 3. There is a strong communication signal level of 50% or better. | Android: 1. Swipe down from the top of the Android device and enable WiFi or Data function. 2. Disabled the Data throttling function in the Data settings. 3. Move closer to the WiFi router or a strong cell phone network location. Apple 1. Swipe down from the top of the Apple device and enable WiFi or Cellular Data. 2. Move closer to the WiFi router or a strong cell phone network location. |
| 2 | Unable to install the application | Operating system incompatibility | Verify the following: 1. Android OS version is 5.1 or higher. 2. Apple iOS version is 13 or higher. | Android: Go to the Settings menu, click on "About" (then on "software version", and confirm the Android OS version is 5.1 or higher. Otherwise, your device is not compatible. Apple: Go to the Settings menu, click on "General", click on "About", then on "Software Version", and confirm the iOS version is 13 or higher. Otherwise, your device is not compatible. |
| 3 | Unable to install the application | Internal storage space | Verify the host device has enough internal storage space. | Android: Go to the Settings menu and click on Storage or Device maintenance and confirm there is at least 300MB of free storage space. Otherwise, free up storage space. Apple: Go to the Settings menu, click on General and then Storage, confirm there is at least 300MB of free storage space. Otherwise, free up storage space. |
| 4 | Unable to download or install the VehicleMRI application as the screen turns ON and OFF | Low Host device battery level | Verify that the battery is fully charged. | Charge the battery if not fully charged, then try the download or installation. Otherwise, try to download and install the application on a known good Host device. Note: The application will not install on a rooted device. |
| 5 | MAF sensor result offset | Disabled location permission for the VehicleMRI app | Verify that the location permission has been "enabled" or set to "allowed" for the VehicleMRI application. | Android: 1. Go to the Settings menu and click on "Apps". 2. Select the VehicleMRI app and click on "Permissions". 3. Confirm that Location permissions are "allowed". Apple: 1. Go to the Settings menu. 2. Scroll down to find VehicleMRI then click to open. 3. Confirm that Location permissions are "allowed". |
| 6 | Vehicle Interface not found | Bluetooth disabled | Verify the Bluetooth is turned ON in the Host device. | Swipe down from the top of the Android/Apple device and confirm the Bluetooth feature is enabled. |
| 7 | Unable to login to the VehicleMRI application | Login | Verify the correct "username" and "password" are entered | If you do not remember the login information, click on forgot password and follow the instructions to reset it. |
| 8 | When trying to login, the application closes and takes you to www.densovehiclemri.com | Inactive subscription | Verify the subscription is current | Confirm you have a valid Subscription in www.densovehiclemri.com. |

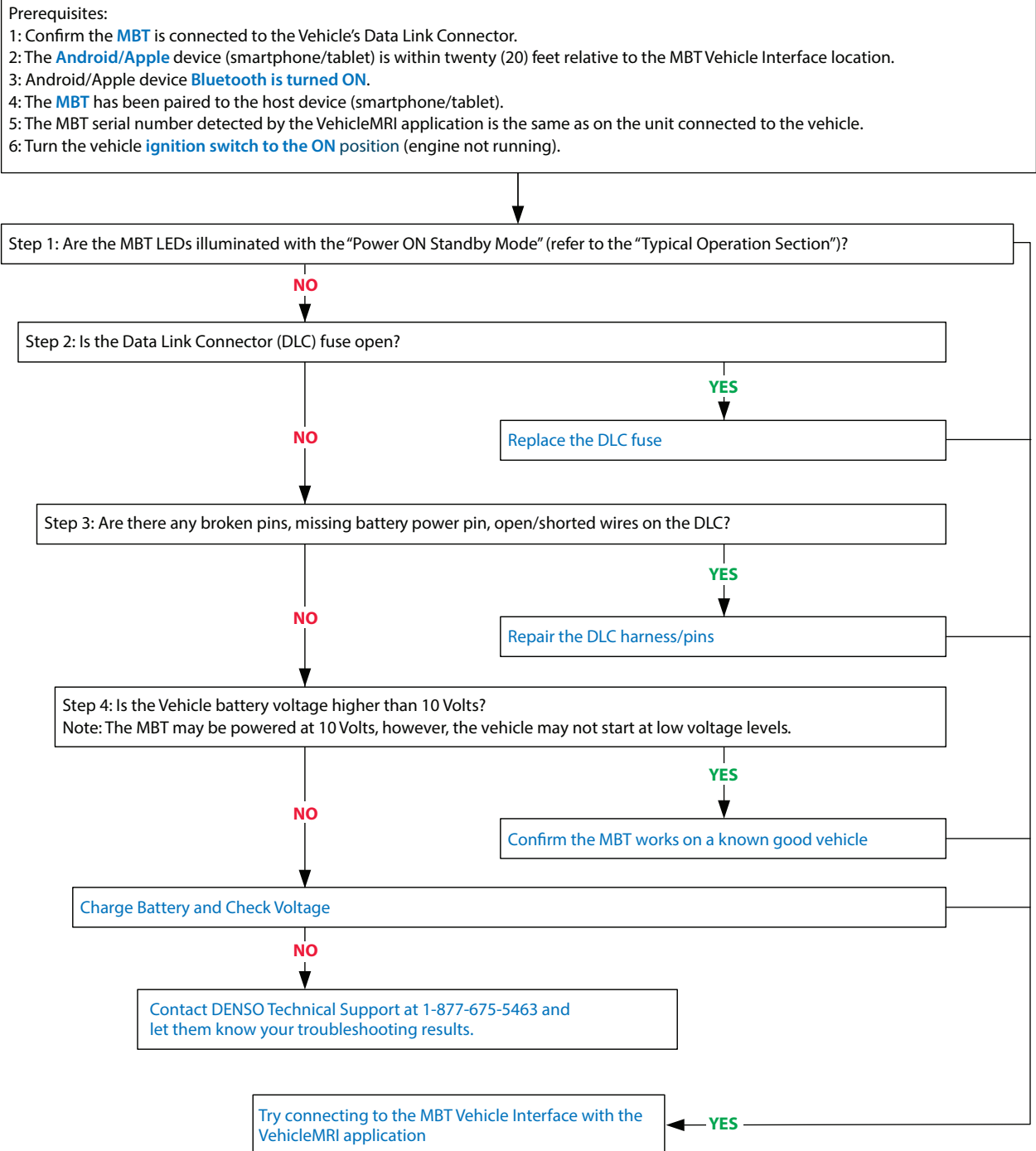
General Troubleshooting CONTINUED

Host Device Troubleshooting Guide CONTINUED

| Item | Failure | Problem Area | Verification | Resolution |
|------|---|----------------------------|---|---|
| 9 | Error message: "Please verify your internet connection and try again" | Unable to login | <p>Verify the following:</p> <ol style="list-style-type: none"> 1. Device has internet connection to WiFi or Data Plan. 2. The throttle (Android)/Low Data Mode (Apple) setting is turned OFF. 3. There is a strong signal level of 50% or better. | <p>Android:</p> <ol style="list-style-type: none"> 1. Swipe down from the top of the device and enable WiFi or Data function. 2. Disabled the Data throttling function in the Data settings. 3. Move closer to the WiFi router or a strong cell phone network location. <p>Apple:</p> <ol style="list-style-type: none"> 1. Go to Settings and click on Cellular. 2. Click on Cellular Data Options, then disable Low Data Mode. 3. Move closer to the WiFi router or a strong cell phone network location. |
| 10 | VehicleMRI application does not respond or closes abruptly | Insufficient RAM | Verify that the Device has at least 2GB of RAM | Consult your device manufacturer's specifications. |
| 11 | Error message: Unable to upload report to the server | Communication interruption | Verify that the device has a stable internet access. | <p>Swipe down from the top of the Android /Apple device and enable WiFi or Data function. Move closer to the WiFi router or a strong cell phone network location and click retry to complete the upload.</p> <p>If it still fails to upload, open up a web browser on the Host device and confirm the internet connection.</p> <p>Otherwise, contact Technical Support at 1-877-675-5463 for assistance on retrieving a report.</p> |

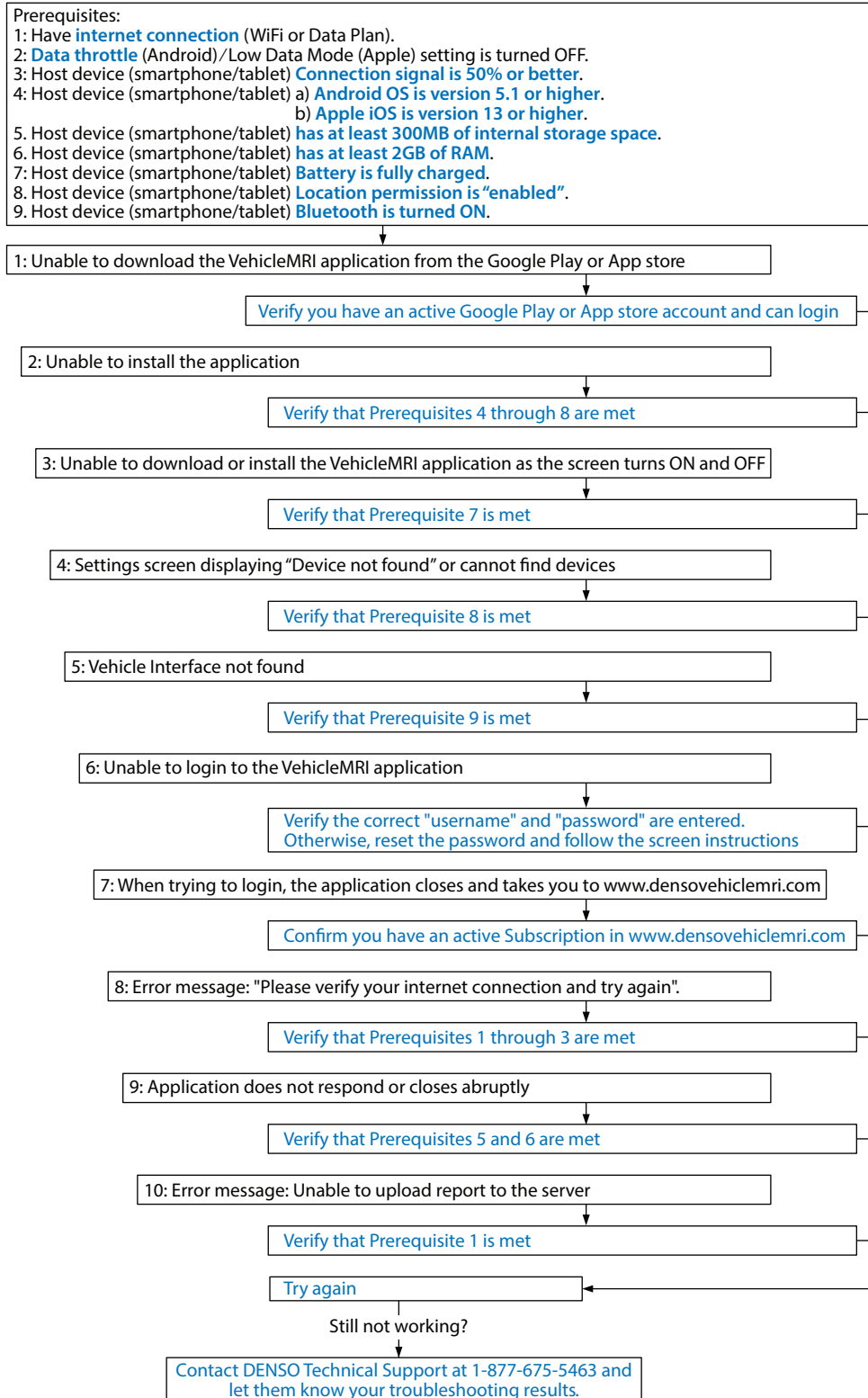
Flow Chart Troubleshooting

1. The Android/Apple device does not find the MBT Vehicle Interface.



Flow Chart Troubleshooting CONTINUED

2. The Android/Apple device does not find the MBT Vehicle Interface.



Specifications

Electrical Connection

J1962 OBD-II Connector

Pins 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16

Wireless

Bluetooth® Class 2 / Bluetooth Low Energy (BLE) (range ~6 m / 20 feet)

Internal antenna

Certifications (Internal Bluetooth® Radio)

FCC Certified

IC Certified

Indicators

OBD-II communication status (MBT to Vehicle)

Bluetooth® wireless status

MBT to host device status

Power

Operating voltage: 10 ~ 17 VDC

Environmental

Temperature range 0°F ~ +50°F

Mechanical

Case material: ABS plastic

Dimensions: 3.6" x 1.7" x 0.9" (92mm x 44mm x 22mm)

Weight: 2 oz

Manufacturer's Warranty Summary

DENSO Products and Services Americas, Inc. ("DENSO") warrants to the end-user that the Product shall be free of defects in materials and workmanship and will function in accordance with DENSO's published specifications, under ordinary intended use and service during the Coverage Period. DENSO shall replace any defective Product covered by this warranty. This remedy shall be the end-user's sole remedy with respect to any defective Product.

This warranty does not cover defects or malfunctions, which result from causes beyond DENSO's control, including without limitation, (i) unusual physical or electrical stress (any damage due to power surges, incorrect electrical voltage, misconnection to any device, or malfunction of any device used with the Product); (ii) accident, neglect, abuse, misuse, force majeure, or other abnormal use or conditions; (iii) normal wear and tear; (iv) repairs or attempted repairs of the Product by an unauthorized person; (v) disassembly, alterations or modifications; (vi) improper servicing; or (vii) transportation damage. This warranty shall extend only to the original end-user and shall be void if any labels or other identifying marks, permanently affixed to the Product when shipped from DENSO, are removed, altered, defaced or obliterated.

Any replacement product may be remanufactured or new, and will include warranty through the remainder of the original warranty period of the originally purchased Product. Refer to the WARRANTABLE PRODUCT AND COVERAGE PERIOD table below for a description on the Product and Warranty Coverage Period.

This warranty is the only warranty made by DENSO with respect to the Product, and is in lieu of all obligations or liabilities on the part of DENSO for damage arising out of or in connection with the sale, use or performance of the Product, including, without limitation, any lost profits or any other consequential, incidental, special or exemplary damages of any kind. DENSO DISCLAIMS ALL OTHER WARRANTIES WITH REGARD TO THE PRODUCT, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION CONTAINED HEREIN.

This warranty does not cover labor costs incurred in the diagnosis of defect, nor does it cover any other contingent expenses such as car rental or towing. A dated proof of purchase receipt is required to validate any warranty claim. This warranty supersedes any other warranty statement and may also give you specific legal rights which may vary from state to state.

DENSO requires the end-user of the Product to submit warranty parts for inspection and audit to verify claimed defects and ensure the accuracy of the claim information.

WARRANTABLE PRODUCT AND COVERAGE PERIOD

| System | Product | Coverage Period |
|------------|---|-----------------|
| VehicleMRI | MBT (Mini Bluetooth®) vehicle communication interface | 12 months |

Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.



Company Information

DENSO Products and Services Americas, Inc.

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Technical Support

1-877-675-5463

Website

www.vehiclemri.com