



# ***Voice Interactive Controls 2.0***



## **INSTALLATION & OPERATION MANUAL**

**INSTALLATION BY  
EMC CERTIFIED  
TECHNICIAN  
ONLY!**

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## 1.1 OVERVIEW

**VIC 2.0** is a speech recognition product that replaces the older VIC product for the AEVIT 1.0 and Gold Series. It is designed to operate not only the secondary vehicle functions but also provide verbal feedback from AEVIT 2.0 systems.

## 1.2 HOW IT WORKS

**VIC 2.0** utilizes the latest speech recognition circuitry and transforms the voice commands of a trained client into vehicle functions. **VIC 2.0** is "speech dependent" which means that the client must train **VIC 2.0** so she will only recognize the client's voice. The vehicle functions include:

- |                      |                     |               |             |
|----------------------|---------------------|---------------|-------------|
| 1. Left Turn Signal  | 6. Wipers (Lo & Hi) | 11. Cruise    | 16. Start * |
| 2. Right Turn Signal | 7. Front Fans       | 12. Park *    | 17. Stop *  |
| 3. Dimmer            | 8. Rear Fans        | 13. Reverse * |             |
| 4. Hazards           | 9. Louder           | 14. Neutral * |             |
| 5. Horn              | 10. Softer          | 15. Drive *   |             |

\* These functions are **Confirmation Functions** (See page 5-1 for more information.)

When the activation switch is triggered, **VIC 2.0** will first send a signal to AEVIT 2.0 to shut off the radio so it will be quiet. **VIC 2.0** will then supply enough power to drive two OEM front speakers so the messages can be clearly heard by the driver. When wired correctly, **VIC 2.0** does NOT require the OEM speakers to be turned on in order to function properly. See section 2.1 for a detailed wiring diagram of **VIC 2.0**. There are two methods in which **VIC 2.0** can operate:

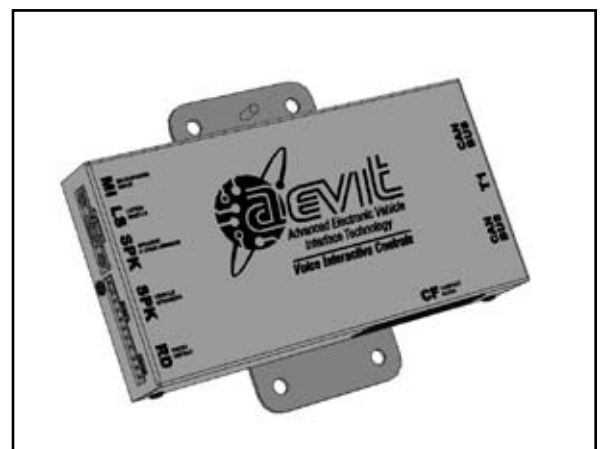
- A standard corded, noise canceling microphone allowing all voice prompts to be played back through the front vehicle speakers. This is the standard package and all **VIC 2.0** units are shipped with this equipment.

**VIC 2.0** is only compatible with AEVIT 2.0

## 1.3 SYSTEM COMPONENTS

VIC Standard Kit:

- 1 **VIC 2.0** CPU Unit
- 1 Noise Canceling Microphone w/ Extension & mounting block
- 1 8-Conductor Speaker Cable
- 1 8' AEVIT CAN Bus Cable
- 2 3/16" Exploding Rivets

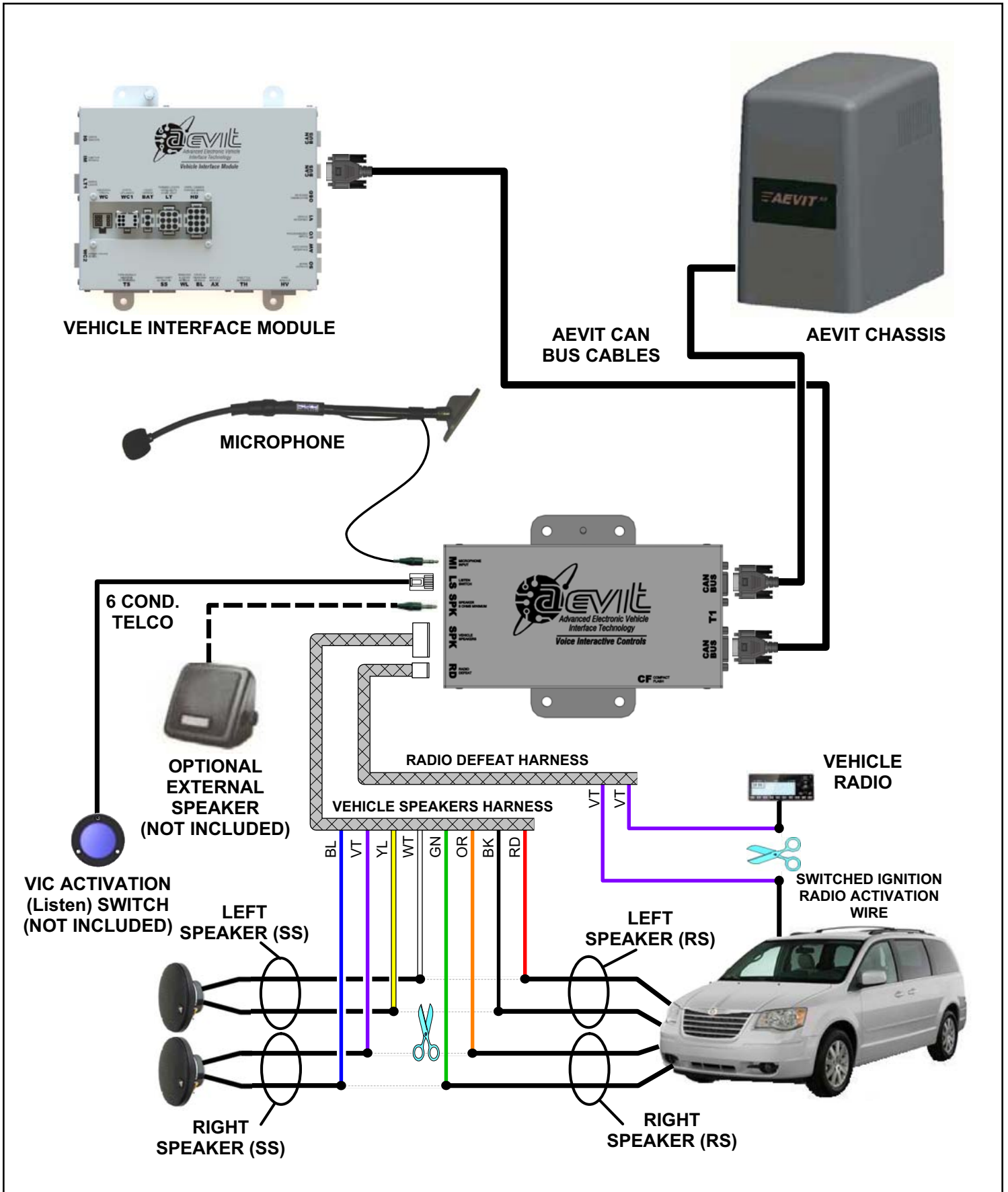


# 2. WIRING

VIC 2.0

## 2.1 STANDARD WIRING DIAGRAM

2-1



### VIC 2.0 INSTALLATION

3-1

#### INSTALLATION STEP 1

Install the **VIC 2.0** CPU Unit behind the center console area within eight (8) feet of both the AEVIT 2.0 Chassis and the Vehicle Interface Module (VIM) so the CAN Bus cable can reach.

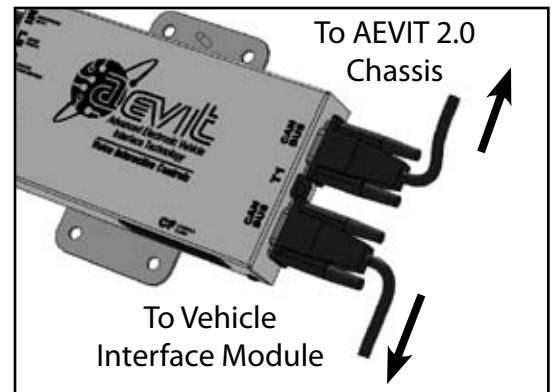


#### INSTALLATION STEP 2

EMC requires that **VIC 2.0** be secured with at least (2) 1/4-20 bolts with lock nuts. EMC also recommends that the EMC technician fabricate a mounting plate with (2) 1/4-20 studs for **VIC 2.0** and weld the mounting plate into the vehicle. This will allow for easy installation and doesn't require drilling thru the firewall of the vehicle.

#### INSTALLATION STEP 3

Connect **VIC 2.0 CPU** to the AEVIT CAN Bus using the provided AEVIT CAN Bus cable. The top connection will typically come from the AEVIT 2.0 Chassis and the bottom will go to the Vehicle Interface Module.



#### NOTE:

FOR THE FOLLOWING STEPS 4-10 REFER TO THE DIAGRAM ON PAGE 2-1 FOR FURTHER INFORMATION ON WIRE COLORS AND EMC CONNECTOR LOCATIONS.

**INSTALLATION STEP 4A - TWO SPEAKERS**

Connect the 8-cond speaker cable to the **VIC 2.0** CPU and route the cables to the individual speakers.

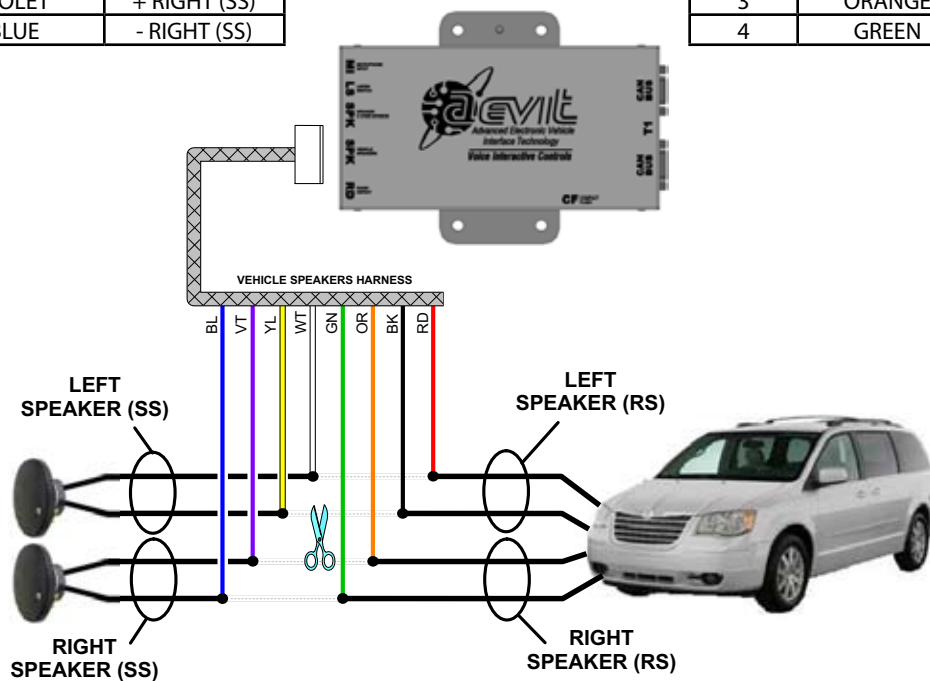
When **VIC 2.0** is activated, the **VIC 2.0** CPU supplies enough power to drive TWO vehicle speakers. EMC recommends that you interface directly with the two front dash speakers or front door speakers if no dash speakers are available. Because the OEM vehicles have several different audio options available for each vehicle which, may or may not include an additional power amplifier, EMC does NOT include vehicle specific wiring diagrams for the **VIC 2.0** system. The left and right front speaker wires will need to be cut **AT THE SPEAKER**. This will leave (4) wires, (2) radio side (RS) and (2) speaker side (SS) on both the right and left sides of the vehicle. The connection to the speakers **MUST** be on the final pair of wires that are routed to the speakers. These wires may be connected directly the back of the radio, or an additional power amplifier which may be located under the front seat or in the rear of the vehicle. The connection **CANNOT** be on the signal wires that are routed from the radio to the power amplifier (if one is installed). If vehicle schematics are available, use them to match the VIC speaker wire polarity with the vehicle speaker polarity.



Locate the two front speakers and cut the two wires to each speaker so you have a vehicle side (VS) and a speaker side (SS). Strip the wire back approx. 3/8 in, solder and heat shrink the **VIC 2.0** speaker cable wires according to the diagram below:

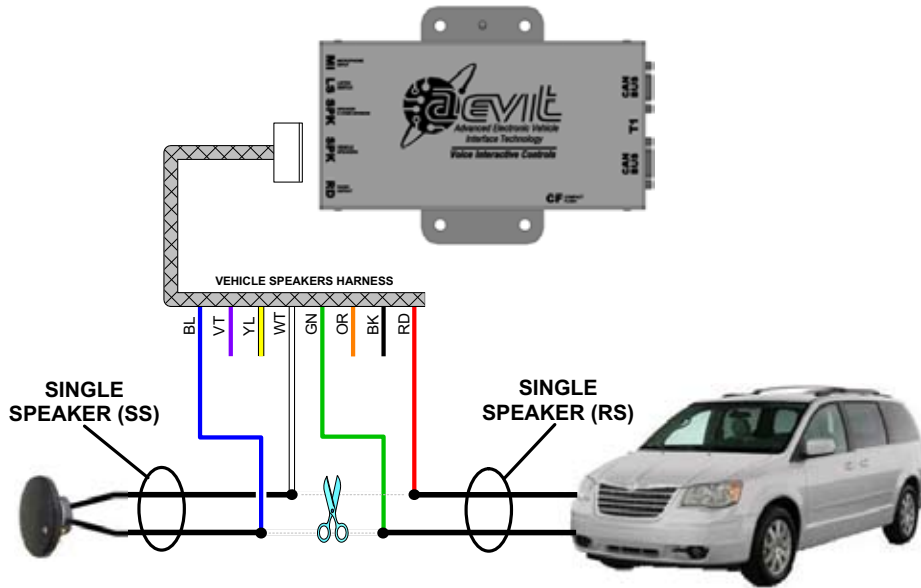
PIN #	HARNES WIRE COLOR	FUNCTION
5	WHITE	+ LEFT (SS)
6	YELLOW	- LEFT (SS)
7	VIOLET	+ RIGHT (SS)
8	BLUE	- RIGHT (SS)

PIN #	HARNES WIRE COLOR	FUNCTION
1	RED	+ LEFT (RS)
2	BLACK	- LEFT (RS)
3	ORANGE	+ RIGHT (RS)
4	GREEN	- RIGHT (RS)



**INSTALLATION STEP 4B - SINGLE SPEAKER**

The following diagram shows how to wiring the VIC 2.0 if only one OEM speaker is being used.



PIN #	HARNESS WIRE COLOR	FUNCTION
5	WHITE	+ SPEAKER (SS)
8	BLUE	- SPEAKER (SS)

PIN #	HARNESS WIRE COLOR	FUNCTION
1	RED	+ SPEAKER (RS)
4	GREEN	- SPEAKER (RS)

**INSTALLATION STEP 5**

Connect the Radio Defeat Harness to the **VIC 2.0** CPU RD port and route the harness to the vehicle's radio.

All digital radio systems contain two 12VDC power feeds. One of these wires is always "hot" and is used to maintain the radio's memory. The other power feed wire should be the "switched ignition radio activation wire", which turns the radio system on.



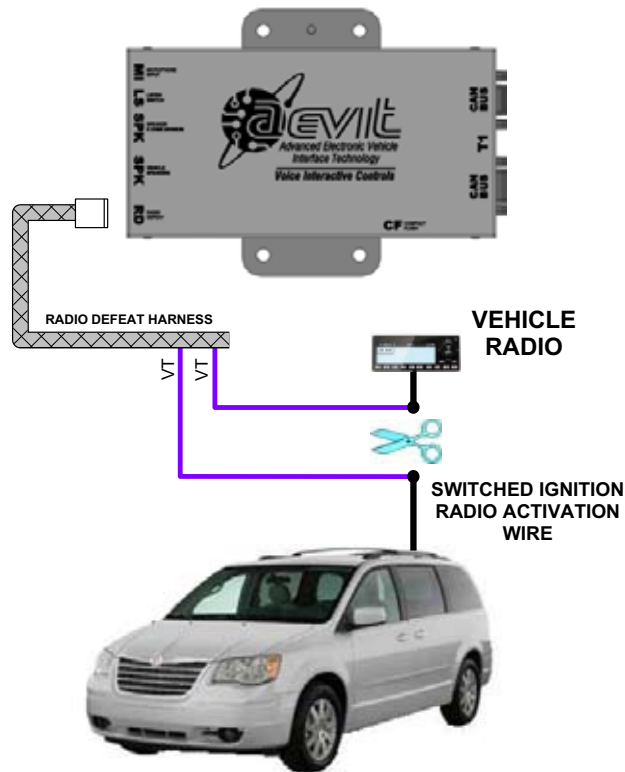
The switched ignition radio activation wire, **NOT THE MAIN RADIO POWER WIRE**, will need to be cut and the Radio Defeat harness should be wired on either side of this cut as shown in the figure below. **DO NOT CUT THE MAIN RADIO POWER WIRE BECAUSE IT WILL LOSE THE SETTINGS FOR THE RADIO.** To locate the switched ignition radio activation wire, simply test for the wire that reads +12VDC when the vehicle's ignition is turned on and 0VDC when the ignition is turned off.

**CAUTION:**

DO NOT CUT THE MAIN BATTERY POWER TO THE RADIO BECAUSE IT WILL LOSE THE SETTINGS. MAKE CERTAIN THAT THE OEM WIRE USED IS THE SWITCHED IGNITION RADIO ACTIVATION WIRE.

**WARNING:**

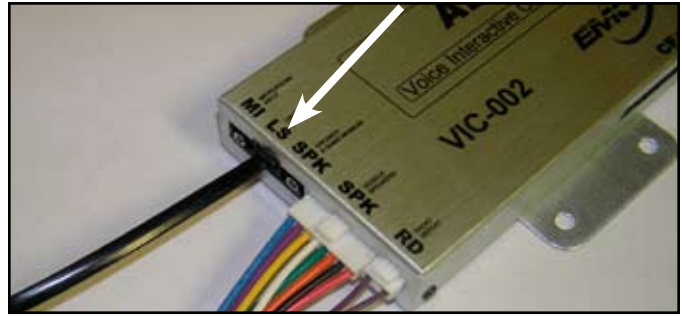
THE RADIO DEFEAT CIRCUIT WITHIN THE VIC MODULE IS FUSED TO 5A. USE CAUTION WHEN SELECTING THE APPROPRIATE OEM WIRE.



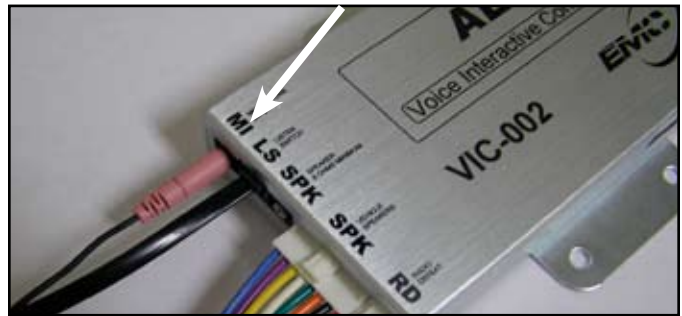


**INSTALLATION STEP 6**

Connect the **VIC 2.0** Listen switch to the **VIC 2.0** CPU LS port and install the switch in a convenient location for the client.

**INSTALLATION STEP 7**

Connect the 3.5 mm microphone extension cable to the MI port on the **VIC 2.0** unit and route the cable to cockpit area of the vehicle. The female end of the cable should be mounted in a convenient place so the client can plug it into the microphone.

**INSTALLATION STEP 8**

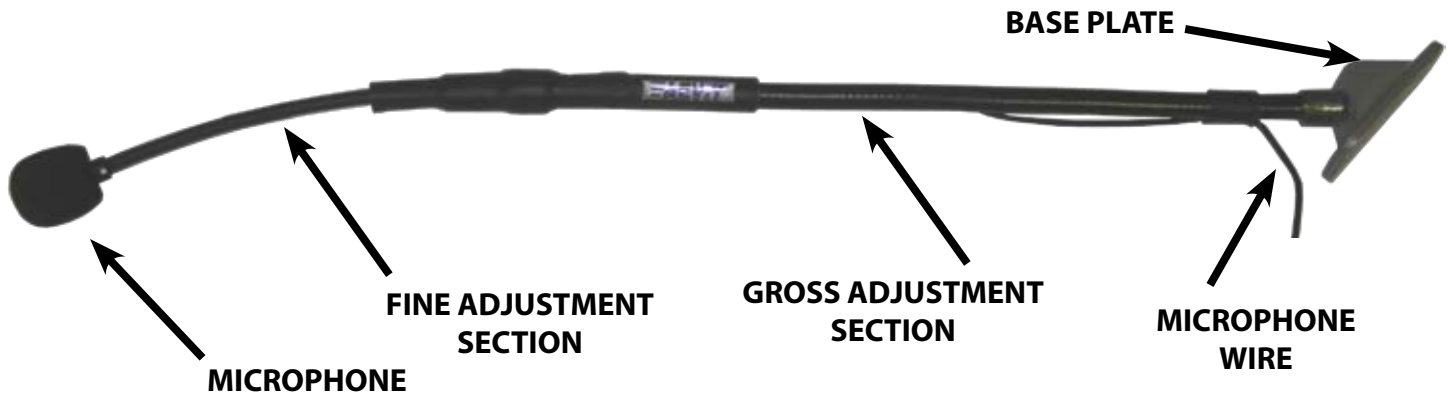
**VIC 2.0** provides the option of using 8 OHMS MINIMUM external speakers (not included in the **VIC 2.0** kits) instead of wiring into the vehicle's speakers directly. If external speakers are used, plug the 3.5mm jack into the SPK port of the **VIC 2.0** CPU. It is recommended that the Radio Defeat feature still be utilized even if the external speakers are used.

**INSTALLATION STEP 9**

Re-install the speakers and covers. Turn on the ignition and turn on the radio to ensure that the radio and front speakers that the Vehicle Speaker and the Radio Defeat Harnesses were soldered to, still work properly.

**INSTALLATION STEP 10 - INSTALLING THE VIC 2.0 MICROPHONE**

The following figure shows the components of the **VIC 2.0** microphone:



Before mounting the **VIC 2.0** Microphone in the vehicle, there is a few things to remember:

**1. It is necessary to position the microphone with the client in the vehicle:**

Typical locations to mount the **VIC 2.0** microphone include the "B" pillar or the upper left roof support trim panel that runs between the "A" and "B" pillar.

**2. Avoid sharp bends of the Gross adjustment section of the microphone:**



**CORRECT**



**INCORRECT**

**3. The microphone should be as un-intrusive as possible:**

The microphone should be mounted such that it comes from behind the client's head with the Gross Adjustment as straight as possible then curve to the client with the Fine Adjustment as shown in the figure to the right. Since it is important for the microphone to be as un-intrusive as possible, the best location for the microphone itself is slightly to the left of the client's mouth. This is also shown in the figure to the right.



Once the microphone is in position, mark the holes where the base plate needs to be mounted then unscrew the Base Plate from the Gross Adjustment section of the microphone. Use the (2) 3/16" exploding rivets provided to mount the base plate to the vehicle then reattach the microphone to the Base Plate.

## 4.1 IMPORTANT CRITERIA FOR TRAINING

EMC recommends that the Certified Technician complete the entire training process so they are familiar with training **VIC 2.0**. This will speed up time spent with training the client.

This section assumes that the AEVIT 2.0 system has been properly installed, is functioning properly and the initial bootup procedure has been completed. See the Operation and Programming Manual for more information.

**VIC 2.0** has two parts to the training. Part 1, **Training**, is to record and train the words and Part 2, **Recognition**, is to test the recognition of the words trained during Part 1.

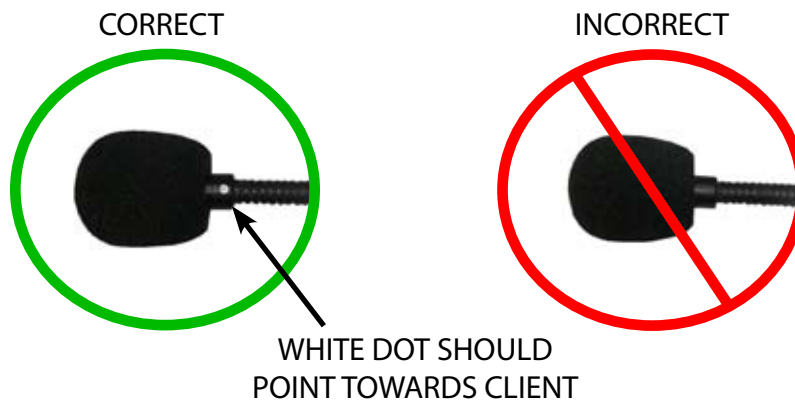
In order to begin training you **MUST** have:

- All vehicle doors & windows shut
- AEVIT 2.0 system awake
- Vehicle's ignition OFF
- Everything as **QUIET** as possible

The AEVIT 2.0 system will stay awake for 30 minutes when the vehicle's ignition is not on but the system is awake. The entire training processes takes approximately 15 minutes so there is plenty enough time to complete the training before AEVIT 2.0 automatically goes to sleep. The more quiet the environment is, the more success you will have training **VIC 2.0**.

During the training of **VIC 2.0** it is important to:

- Make sure the microphone is positioned correctly. The **WHITE** dot on the microphone should be pointed toward the client as shown in the figures below.



- Speak loudly and clearly
- During Part 2, **Recognition**, repeat the command as close as possible to the way it was trained in Part 1, **Training**.
- Wait for the "beep". **VIC 2.0** will inform you when it time to speak by playing an audible "beep". For best training and recognition results, wait approximately (1) second after the "beep" to begin speaking.

To access the **VIC 2.0** Training Mode, follow these steps:

**STEP 1**


Wake up the AEVIT 2.0 system and press the "Accept" button on the initial warning screen. If **VIC 2.0** is installed properly, **VIC 2.0** will say,

**VIC 2.0:** "You now have voice activation"

**VIC 2.0:** "Please select Training Mode"




**STEP 2**

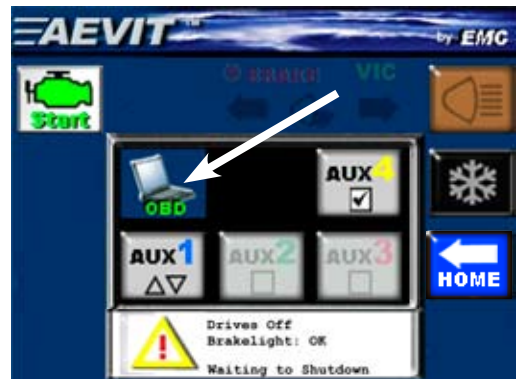
In the Home Screen, press the  icon to access the Auxiliary Menu.

Do not turn the ignition on.





**STEP 3**

In the Auxiliary Menu, press the  icon to access the User Screens



**STEP 4**

Press "Accept" on the User Screen Warning to advance to the first User Screen. The first screen in the User Screens is the User Status screen. If **VIC 2.0** was installed properly, the VIC Status should read "Installed" and the VIC options shown in the figure to the right should be present. To access the training mode use the  icon to highlight "VIC - Training Mode" and use the  icon to select ON to enter "Training Mode"



### TRAINING STEP 1

Once Training Mode is entered **VIC 2.0** will say *“Training Mode is selected. Please press the listen switch now.”*

Follow the verbal instructions from **VIC 2.0** for Training, Part 1. She will guide you through the training of (17) different commands including commands to raise and lower the speaker volume. Below is an example of the training:

**VIC 2.0:** *“Please say LEFT.”*

BEEP

(wait one second)

Client: *“LEFT”*

**VIC 2.0:** *“Please repeat LEFT.”*

BEEP

(wait one second)

Client: *“LEFT”*

### TRAINING STEP 2

Once Training Part 1 is completed, **VIC 2.0** will say: *“Training mode part 2.”* In this mode, follow the instructions from **VIC 2.0** as she will guide you through the recognition portion of the training.

If for some reason you are unable to complete the training and must start over, you must turn the training mode OFF from the User Status screen and wait for **VIC 2.0** to say *“Training Aborted.”* Then you must turn Training Mode back ON to start over.

### TRAINING STEP 3

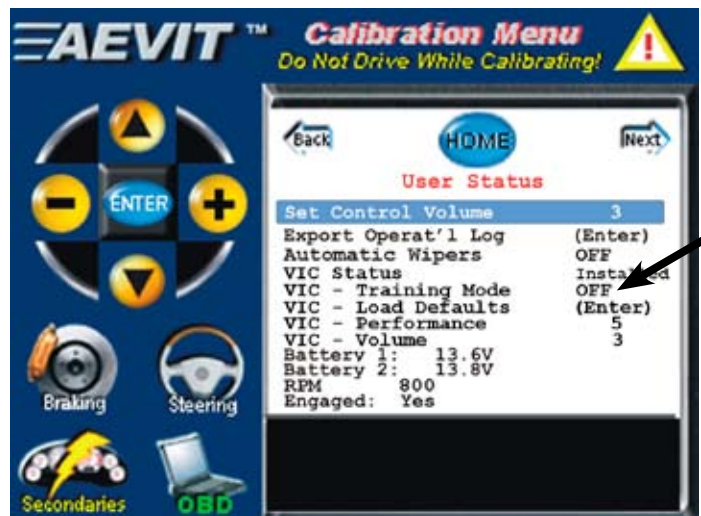
After Training, Part 2 has been completed and all functions have been recognized by **VIC 2.0**, she will say,

*“Training completed”*

Then she will ask you at this time to turn the VIC Training Mode Selection to the OFF position. Once the VIC Training Mode Selection is in the OFF position, **VIC 2.0** will say,

*“You now have voice activation.”*

This completes the training of **VIC 2.0**



### OPERATION STEP 1

When training is completed, boot down the AEVIT 2.0 system as described in the Operation and Programming Manual. Boot up the system by pressing the Wake-Up button and press the Accept Button. **VIC 2.0** will say, "You now have voice activation" which means you can now operate the (17) functions listed on page 1-1.

### OPERATION STEP 2

In order to operate the normal functions, simply press the Listen Switch wait for the "beep" and say the command as close to the way it was trained as possible and the system will execute the function. For example, if you wish for the **VIC 2.0** volume to be LOUDER:

Press the Listen Switch:

BEEP

(wait one second)

Client: "Louder"

**VIC 2.0:** "Louder recognized"

The **VIC 2.0** system's volume will then become louder.

There are six (6) critical functions that **VIC 2.0** will require confirmation from the client before executing the commands. These are called **Confirmation Functions**. They are: PARK, REVERSE, NEUTRAL, DRIVE, START, and STOP. When the client wishes to execute one of these commands, they will have to repeat the command to **VIC 2.0** before the system will execute the command. For example, with the ignition on and the engine running, if the client wishes to shift the vehicle from PARK to DRIVE:

(The brake pedal must be depressed)

Press the Listen Switch:

BEEP

(wait one second)

Client: "Drive"

**VIC 2.0:** "Please confirm, drive"

Client: "Drive"

**VIC 2.0:** "Drive recognized"

The AEVIT 2.0 system will shift the vehicle into drive.



## OPERATION STEP 2 (CONT'D)

The START/STOP Confirmation Functions are a bit different than the shifting functions. In order to START the engine, the client must first physically wake the system up by pressing the "Wake-Up" button. Then, the client can prompt **VIC 2.0** to START the vehicle. For example, to START the vehicle:

Press the Wake-Up Switch  
 Press the Listen Switch:

BEEP  
 (wait one second)

Client: "Start"

**VIC 2.0:** "Please confirm, start"

Client: "Start"

**VIC 2.0:** "Start recognized"

The AEVIT 2.0 system will then turn the ignition on and start the vehicle's engine.



The STOP function turns off the vehicle's ignition. The client will still have to manually boot the system down after using the STOP command.

### NOTE:

THESE COMMAND CONFIRMATIONS ARE ADDED SAFETY FEATURES OF **VIC 2.0** TO PREVENT THE CLIENT FROM ACCIDENTLY EXECUTING A CRITICAL FUNCTION.

## OPERATION STEP 3

If you have a AEVIT Steering System, **VIC 2.0** will walk you through re-engaging the Steering Servomotor once it has been dis-engaged. To test this, manually disengage the Steering Servomotor as described in the Operation and Programming Manual and boot down the system. When the system is booted up **VIC 2.0** will walk you through the steps for re-engaging the Steering Servomotor.

## OPERATION STEP 4

Besides engaging the Steering Servomotor, **VIC 2.0** has other verbal feedback when the client is operating the AEVIT 2.0 system. Most notably, when the client boots the system up, **VIC 2.0** gives feedback on the AEVIT 2.0 system's boot-up procedure such as:

- Notifying the client of when to disable the controls
- Providing explanation on the AEVIT Backup Self Tests
- Verifying control of the input devices

When the client boots down the system, **VIC 2.0** will provide feedback such as:

- Notifying the client of the detected loss of ignition
- Details on shutting down the system

## OPERATION STEP 5

There are three other selections for **VIC 2.0** in the User Status screen. Also, there is the VIC Revision in the Black IMC.

### VIC - Load Defaults:

This option resets the original defaults.

### VIC - Performance:

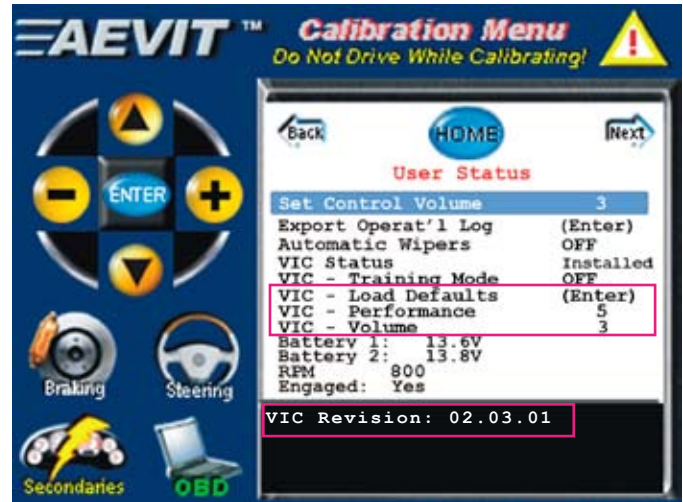
This is the level at which **VIC 2.0** recognizes the voice commands. (1) being the loosest performance and (5) being the tightest performance. Normal operation should be around (3)

### VIC - Volume:

This is the volume of **VIC 2.0**. (1) being the lowest volume and (8) being the highest volume.

### VIC Revision:

This is the current software version of VIC 2.0





## 6. FINAL TESTING

**VIC 2.0**

1. Replace all vehicle door and/or dash panels removed during installation.
2. Ensure all wiring harnesses are properly soldered with heat shrink and have been bundled and secured properly.
3. Verify proper operation of all voice commands with client before they take delivery of the vehicle.

## 7. SERVICE REQUIREMENTS

**VIC 2.0**

**VIC 2.0** does not have any mandatory service requirements. Please contact EMC Service if you have any questions regarding **VIC 2.0**.