AWARE VEHICLE INTELLIGENCE™
INSTALLATION MANUAL

FOR IC Corp. Buses
FE\RE Models

MODULES ARE NOT ACTIVATED WHEN SHIPPED. PLEASE SEE THE ACTIVATION GUIDE.

March 7th, 2008
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1. AWARE™ Vehicle Models
This installation procedure is for IC Corp. RE Buses. Other vehicles may not be similar.

1.1. Before Installing
Please read this entire document prior to installing the AWARE module. Pay attention to all Cautions and Warnings.

CAUTION: Unauthorized antennas, modifications, or attachments could impair call quality, damage the module, or result in violation of FCC regulations. Do not use the module with a damaged antenna. Please contact your local authorized International® Dealer for antenna replacement.

WARNING: To avoid property damage, personal injury, or death, park the vehicle on a flat level surface, set the parking brake, turn the engine off, and chock the wheels.

1.2. FCC RF Exposure Information
In August 1996 the Federal Communications Commission (FCC) of the United States with its action in Report and Order FCC 96-326 adopted an updated safety standard for human exposure to radio frequency electromagnetic energy emitted by FCC regulated transmitters. Those guidelines are consistent with the safety standard previously set by both U.S. and international standards bodies. The design of this cellular module complies with the FCC guidelines and these international standards.

WARNING: While the system is in operation, a separation distance of at least 20 centimeters (approximately 8 inches) must be maintained between the cellular antenna and the body of all persons in order to meet the FCC RF exposure guidelines.

2. How the system works
The AWARE module is a data collection and communication system mounted on a vehicle. It consists of a GPS and cellular antenna and a data communicator module. The data communicator module collects the vehicle’s location and system information and sends it to the network control center through wireless technology.
3. Kit Installation Components

3.1. RE Kit Components

Kit Part Number: 2592902C91
- 3620482C91  AWARE module
- 3807956C91  AWARE main harness
- 2588150C91  Combined GPS & Cellular Antenna
- 2595263C91  Velcro, Industrial
- 2590243C91  Harness, J1939 Adapter
- 2590862R1  Activation Guide

3.2. Driver Alert Kit Components (Optional)

Kit Part Number: 2589356C91
- 3593875C2  Driver Alert Switch
- 3594960C91  Driver Alert Switch Harness

3.3. Components Provided by Installer

- Assorted tie-wraps
- Green Lee Punch for standard rectangular Eaton/Cutler Hammer Switch (part number ZTSE4426 from SPX).
- Diamond Logic® Builder Service tool for programming / provisioning module
- EZ-Tech® COM cable (IC3 or IC4)
4. AWARE Module Installation

1. Pull back the rubber flap located to the lower left of the steering column. It may be retained by three screws and a metal bracket. Remove the three screws to release it.
2. Clean the sheet metal behind the flap of any dirt or dust.
3. Connect the AWARE harness to the AWARE module with the two Deutsch connectors. The two connectors are keyed and should be aligned before inserting.
4. Attach two pieces Velcro to the back of the module.
5. Secure the other two pieces of Velcro to the Velcro on the module with the adhesive side exposed.
6. Place module onto sheet metal with antenna connections facing the front of the bus and the module connectors facing the rear of the bus.
7. Hold module in place for 20 seconds to make sure Velcro is secure.
5. AWARE Main Harness Installation

5.1. Battery and Ground
1. Route the BATTERY (red) and Ground (white) wires from the AWARE harness through the pass through into the Fuse & Relay panel on the driver’s side of the bus.
2. Find the BATTERY stud, located above the main Fuse & Relay panel. Remove the retaining nut on the stud, connect battery feed and replace the retaining nut.
3. Find a GROUND stud and remove the retaining nut on the stud, connect ground and replace the retaining nut.

5.2. J1939 Connection
1. Locate the 3-pin J1939 Connector in the cab harness usually located in the front left corner of the dash near the pass through to the fuse panel. (It will contain a YELLOW and GREEN wire twisted pair.)
   a. J1939 Flat 3-pin connector with terminating resistor

   ![Figure 3 - J1939 Flat 3-pin Connector and Terminating Resistor Location on Cab Harness](image)

2. Disconnect the J1939 Terminating Resistor assembly from the cab harness connector.
3. Connect the J1939 Terminating Resistor to the 3-pin connector on the AWARE harness located near the AWARE module, next to the two module connectors.
4. Connect the J1939 connector on the AWARE harness to the J1939 connector on the vehicle’s main cab harness.

5.3. Gauge Cluster Connection (Ignition Feed and J1708)

1. Locate the green gauge cluster connector plugged into the back of the gauge cluster and located in the middle. Note: This may require the removal of the gauge cluster.
2. Disconnect the green gauge cluster connector and plug it into the female connector on the AWARE harness.
3. Plug the male gauge cluster connector of the AWARE harness into the back of the gauge cluster.
4. This connection through the gauge cluster contains the ignition feed, J1708 data link and fuel level wiring to the accessory 1 wire for the AWARE module.

6. **Stop Arm Connection**
   1. Route stop arm connectors out into the fuse panel
   2. Find the lamp flasher controller in the fuse and remove the wire connected into position 9 or 10
   3. Plug that wire into the male connector on the harness and connect the female connector onto the lamp flasher controller into the same position as the wire just removed.
7. Antenna Installation

1. Place the antenna on the flat metal plate between the windshield and the beginning of the instrument panel.
2. Look for a pass through where the instrument panel meets the frame of the bus in the front left corner.
   a. Yes - route the antenna cables through the pass through and down to the module.
   b. No – drill a hole in the instrument panel and route the antenna cables through it and down to the module. **Note: Double check the area you are going to drill for any obstructions on the inside of the instrument panel**

![Hole for antenna routing](image)

**Figure 9** – Green gauage cluster connector

**CAUTION** – The routing of the AWARE antenna cable is extremely important. There must not be any kinks in the cable, and it must not be routed in such a manner as to make it susceptible to cuts in the outer insulator. Cuts and/or kinks in the cable will adversely affect AWARE signal reception and may permanently damage the AWARE module.

3. Connect the antenna cables to the AWARE Module and finger tight only.
4. Coil and tie wrap excess antenna cable lengths to the AWARE harness. Do not kink, pinch or tightly coil while securing excess antenna cable.
8. Driver Alert Switch Installation (Optional)

1. The recommended location for the Driver Alert Switch is the lower right section of the central instrument panel. *(If the recommended location is not available, select a location that is accessible to the driver but away from normal vehicle operation equipment.)*
2. Remove the Center Panel Trim piece.
3. Remove the Storage Box.
4. Reach through the Storage Box location and outline the metal dash panel onto the back of the Plastic Plate to ensure the switch will mount without interference.
5. Remove the Plastic Plate.
6. The recommended method to create a rectangular switch slot is to use a Green Lee Punch (P/N ZTSE4426 from SPX).
7. Insert the Driver Alert Switch Connector from the backside of the Plastic Plate until it snaps securely in place.
8. Connect the small black 8-pin connector on Driver Alert Switch harness to the AWARE main harness.
9. Connect the panel dimmer feed (blue wire) from the Driver Alert Switch harness in the vehicle panel dimmer circuit splice pack. The vehicle panel dimmer circuit splice pack is located on the main cab harness in the Storage Box location.
10. If the vehicle panel dimmer circuit splice pack is not available, locate the blue dimmer feed circuit number A62 in a switch pack pigtail harness. Cut and splice circuit using a wire crimp.

![Figure 10 - Panel dimmer splice pack](image)

11. Connect the Driver Alert Switch to switch connector mounted in the Plastic Plate.
12. Reinstall the Plastic Plate to the metal dash panel.
Remember to configure with Diamond Logic® Builder as defined in Section 10 Configuration.
9. Software Upgrade

Verify the module contains the latest version of software by using Diamond Logic® Builder. Launch Diamond Logic® Builder while connected to the Internet to ensure the latest version of Diamond Logic® Builder software is downloaded onto the computer:

1. Connect your International ® EZ-Tech® or other laptop with Diamond Logic® Builder to the Internet
2. Launch Diamond Logic® Builder. Once Diamond Logic Builder opens, the computer may be disconnected from the internet.
3. Turn ignition Key ON.
4. Attach the computer to the diagnostic connector in the vehicle using an EZ-Tech® COM cable.
5. Allow Diamond Logic® Builder to detect the vehicle and module.
6. On the Select Tab, highlight the “VIN/Name” of the vehicle being programmed
7. Under Module, highlight International® Telematics
8. Select Tools, Get Data, Get Module Data
9. Select Edit, Update Software, Update Module

   a. If the screen displays a message “Already at latest version”, click the “OK” button and proceed to the next section. *(The module already has the latest version of software).*

   ![Already at Latest Version](image1)

   ![Software Version (Kernal) increased under Selected Module](image2)

   b. If the Status field next to VIN/Name updates to “Unsaved Changes”, perform the following steps. *(The module needs upgraded to the newer version of Software as displayed in the selected module column):*

   1. Select File, Save
   2. Select Tools, Program, Program Module
10. Configuration
The follow section details how to configure the parameters by using templates. To configure the parameters manually, see Appendix A.

10.1. Download Templates

10.1.1. Dealers
Templates can be downloaded from the ISIS web page http://service.navistar.com/
Select menu item: Technical Publications
Select menu item: AWARE Technical Publication
Scroll down on the screen to view the list of templates.

10.1.2. Customers
Templates can be downloaded from http://AwareTechPubs.internationaldelivers.com/
Scroll down on the screen to view the list of templates.

10.2. Import Templates into Diamond Logic® Builder
1. Click on the hyperlink for the applicable template.
2. After the “File Download” screen appears, select Save
3. After the “Save As” screen appears, select a folder you will remember.
4. At the bottom of the “Save As” screen, for “Save as type” select “All Files”
5. Select Save
6. Once the template file finishes downloading, go back to Diamond Logic® Builder, and select File, Import…

7. When the Open window appears, select the template file that was downloaded to the laptop and click Open.
8. The template will now appear at the bottom of the VIN/Name list

10.3. **Apply Templates to module**

9. Highlight VIN/Name of the vehicle being programmed
10. Under Module, highlight International® Telematics
11. Select Edit, Apply Templates…
12. Select the desired template
13. Checkbox only Parameters
14. Select Apply Selected Templates
15. Next to the VIN/Name, Status will change to Unsaved Changes
16. Select File, Save

10.4. **Program Templates to module**

17. Select Tools, Program, Program Module
11. Activation
The module MUST be activated to communicate to the website.

1. **Select Tools, Activate**
2. Follow Diamond Logic® Builder prompts.
3. On the bottom right side of the screen, State will update to: **AWARE attempting to connect**
4. **Allow 10 minutes for the module to activate.**
5. Upon activation of the module, the State will update to: **AWARE activated**

![Image of activation process]

12. Final Assembly Steps
1. Tie wrap the AWARE harness to the cab harness where needed.
2. Place rubber flap back in place and secure.

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A Program Parameters Manually
Parameters can be programmed manually (instead of using templates) in Diamond Logic®
Builder through the following steps:

1. Highlight VIN/Name of the vehicle being programmed
2. Under Module, highlight International® Telematics
3. Select tab Features.
4. Select sub-tab AWARE.
5. 

Data Sources
   Enter Value: None
7. Select Parameter: Engine Speed Exception RPM Threshold
   Enter Value: 2900
8. Select Parameter: Transmission Retarder Status Source
   Enter Value: J1587
9. Select Parameter: Vehicle Distance Source
   Enter Value: J1587

Fuel Sender
10. Select Parameter: Fuel Level Source
    Enter Value: General Purpose Input 1
11. Select Parameter: Analog 1 Mode
    Enter Value: Analog – Battery/Ignition biased sensor
12. Select Parameter: Analog 1 Filter Coefficient
    Enter Value: 16
13. Select Parameter: Analog 1 X Values
    Enter Value: 1.2, 22, 35.2, 43.2, 49.2
14. Select Parameter: Analog 1 Y Values
    Enter Value: 0, 63, 125, 188, 250

Park Brake
15. Select Parameter: Park Brake Source
    Enter Value: General Purpose Input 4
16. Select Parameter: Analog 4 Mode
    Enter Value: Digital High – Battery Bias

Driver Alert Switch (If the Driver Alert Switch has been installed, perform the next step.)
17. Select Parameter: Driver Alert Switch Installed
    Enter Value: Enable

18. Select File, Save
19. Select Tools, Program, Program Module to program the module

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## B  AWARE Module LED Troubleshooting Table

<table>
<thead>
<tr>
<th>Indicated Items</th>
<th>LED’s</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Power disconnected</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>Sleep mode active</td>
<td>Heart-beat</td>
<td>OFF</td>
</tr>
<tr>
<td>Awake mode active</td>
<td>Slow Flash</td>
<td>-</td>
</tr>
<tr>
<td>Ignition is ON</td>
<td>Steady ON</td>
<td>-</td>
</tr>
<tr>
<td>Internal Fault Detected</td>
<td>Fast Flash</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Highest priority for LED “A”. Indicates in Awake and Ignition modes also.</td>
</tr>
<tr>
<td>GPS OFF</td>
<td>-</td>
<td>OFF</td>
</tr>
<tr>
<td>GPS active</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>GPS acquired</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Cellular Modem OFF</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Cellular Modem signal strength (Low &amp; no service)</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Cellular Modem signal strength (High)</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Cellular modem transmitting data</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Communication on J1939 data link</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Cellular modem receiving data</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Highest priority for LED “D”. Shall indicate for a minimum of 3 seconds.</td>
</tr>
</tbody>
</table>

### Flash Rate Definition
- **Heartbeat**: 1 flash every minute
- **Slow Flash**: 1 flash every second
- **Fast Flash**: 4 flashes every second