Road Alert

D&R ELECTRONICS
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RAT-RA-40UM

RAT-RA-20UM

RAT-RA-20U

RAT-RA-40U

Table of Contents

Parts List

Part #	Description	Qty
LEDRAT-A/R-20U LEDRAT-A/R-40U LEDRAT-A/R-20UM LEDRAT-A/R-40UM	Road Alert Tall 20" Led Amber/Red, USB Road Alert Tall 40" Led Amber/Red, USB Road Alert Tall 20" Led Amber/Red Motorized, USB Road Alert Tall 40" Led Amber/Red Motorized, USB	1
670-00019-01-01	Road Alert Touchpad Serial Com, USB	1
926-0007 (only in non-motorized)	Bracket—Road Alert to Light Bar (Blk.S.G)	2

Hardware List

Motorized

Part #	Description	Qty
411-0031	Bolt 1/4-20 x 1/2" Hex/S.S.	4
413-0018	Washer 1/4 Flat 18.8 S.S.	4
432-0002	Nut 1/4-20 Nyloc S.S.	4

Non-Motorized

Part #	Description	Qty
411-0031	Bolt 1/4-20 x 1/2" Hex/S.S.	4
413-0018	Washer 1/4 Flat 18.8 S.S.	4
432-0002	Nut 1/4-20 Nyloc S.S.	4
413-0005	Washer 5/16 Flat S.S.	
432-0008	Nut 5/16-18 Nyloc S.S.	
411-0036	Bolt 5/16"-18 x 3/4" Carriage S.S.	

ROAD ALERT Controller

Introduction

The *ROAD ALERT Controller* is a micro-processor based controller designed to be used In conjunction with the RA20 and RA40 Road Alert™ traffic direction devices. The controller allows for the onboard storage of up to 80 user defined messages in addition to having five (5) factory loaded messages. Message format allows for a wide variety of message styles to be implemented (i.e. fixed, rolling, scrolling or flashing).

The controller supports maintenance of user messages using the Road Alert Message Manager (RAMM) a Windows compatible software interface and loading the message via USB thumb drive (memory stick), or by directly connecting a USB keyboard.

In environments where Road Alert™ devices are single function the keyboard interface is sufficient. Users wishing to manage a variety of message lists or where the Road Alert™ devices are shared by departments the RAMM software interface and uploading via a USB memory stick is preferred.

The Touchpad Interface

The touchpad interface allows for complete control of the Road Alert TM device. Messages may be viewed and selected for display. The touchpad also allows for the addition of user messages via a direct connection to a Windows compatible USB keyboard or USB memory stick. A complete list of touchpad buttons and functions is shown in Table 1.

The LED message display area is a two (2) line display, each with a specific purpose as follows:

- The top line of the display always displays the message currently displayed on the Road Alert TM device.

- The second display line will display messages from the internal or user message list as appropriate. The message display is the current "active" message..

The ROAD ALERT controller is equipped with two (2) external interface ports (Figure 1.) as follows:

Figure 1

Button	Function
ON/OFF	Turns on the Road Alert^{TM} and touchpad
DIMMER	Reduces the intensity of the Road Alert^{TM} LED display array
SCROLL h	Causes the controller to scroll "up" through the user defined message list Note: "UP" is defined as from lowest to highest indexed message
SCROLL l	Causes the controller to scroll "down" through the user defined message list Note: "Down" is defined as from highest to lowest indexed message USB LOAD Function—Activated by holding this key while using the ON/OFF key.
DISPLAY	Causes the currently "active" message in the LED display area to be displayed on the Road Alert^{TM} device BACKLIGHT & CONTRAST—Activated by holding this key while using the ON/OFF key.
Arrow Store	"ARROW" mode allows the user to loop through the factory default message list. Each press of the button will cause the next message in the list to be displayed as the "active" message in the LED display area. STORE—function is used to complete the loading of the text messages via the USB thumb drive (stick).

Table 1.

1. USB—allows for direct connection to one of the following:

    • USB keyboard in order to update the user message list (see "Programming User Messages" section)

    • USB memory stick, to lead newly generated messaged.

2. LED—This is the communication port the to the Road Alert^{TM} Message Sign

Operating Instructions

The ROAD ALERT^{TM} controller provides all functionality necessary to select and display messages on the Road Alert^{TM} Message Sign.

Note: Ensure the RA20 or RA40 Message Sign has been properly connected to both power and negative (earth) ground. In addition, ensure that the interface cable between the RA20 or RA40 is connected to the controller before attempting to use.

Powering on the Device—Press the ON/OFF button to supply power to both the ROAD ALERT controller and the Road Alert^{TM} Message Sign. When powered on, the LED message preview display area will display the last message that was displayed on the device.

Display Factory Default Messages—The following factory default messages are available:

- Blank (ALL CHARACTERS OFF)

- Arrow RIGHT

- Arrow LEFT

- CENTRE OUT Arrow

- Flash (alternate flash of two outboard characters)

The default message list is accessed by pressing the "ARROW" button o the touchpad which will cause the blank message to appear in the LED message preview display area. Each subsequent push of the "ARROW" button will cause the next sequential factory default message to be displayed as the "active" message in the LED message preview area.

Display User Defined Messages—The user defined message list I accessed using the "SCROLL h" or SCROLL I" buttons to browse through the messages. Each subsequent push of the button will cause the next message in that direction to be displayed as the "active" message in the LED message preview area.

Selecting a Message for Display—At any point the message displayed in the LED message preview area may be displayed on the ROAD ALERT^{TM} Message Sign by pushing the "DISPLAY" button. When pushed the "active" message in the LED message preview area will be displayed on the Road Alert TM Message Sign. When a message is being displayed on the sign the red LED indicator on the "DISPLAY" button will be lit.

Clearing Message Display—The message display may be cleared by displaying the "Blank: factory default message.

Note: When the "Blank" message is displayed on the device the red LED light on the "DISLPAY" button is not illuminated.

Programming User Messages

The RIOAD ALERT^{TM} controller has the capacity to story eighty (80(user defined messages. Messages lists may be downloaded to the ROAD ALERT^{TM} controller either by using the ROAD ALERT^{TM} Message Manager (RAMM) software and a USB thumb drive or directly via the keyboard interface.

The ROAD ALERT controller (Touch Pad) will already have a set of standard messages preloaded into the user memory section. If these need to be erased load a USB Thumb Drive, with a blank message file and follow the loading procedure on page 6. Otherwise erasing the messages by keyboard will require accessing them one at a time.

To clear messages using the keyboard, press the DEL key when the message is displayed and confirm YES/NO to message line deletion. Do this for all messages displayed until they are all gone or just delete what is desired.

To Load/Edit Messages via Keyboard Interface:

1. The controller must be connected to a message device and the device must be connected to power and ground prior to loading messages.

2. **Ensure** the power to the controller is off (press ON/OFF button)

3. To initiate the interface

   - **Press and hold** the **"SCROLL ↓"** button (Figure 2).

   - **Press and release** the "ON/OFF" button. The controller will respond by displaying the message **"D&R Electronics"**

   - Release the **"SCROLL ↓"** button. The controller will respond by displaying the message **"Connect Keyboard or thumb drive"** (Figure 3).

   - Connecting the keyboard will bring up the first line of the already existing message or a blank line (if the messages have been cleared).

4. **To enter/edit a message**

   - **Key** the message in using the keyboard. The message will display in the LED message preview display area as it is typed. **NOTE: The cursor will always go to the beginning of the first message line.**

   - **If pre-existing messages are in memory, the Keyboard "↑" and "↓" arrows will allow you to scroll through them and the cursor will be at the beginning of each line.** To edit the message just type over the existing message.

   - **Press ENTER** key on the keyboard to initiate the saving if the message, the LED message preview display area will display the question "Save (Y/N)."

   - **Enter** "Y" on the keyboard to confirm and save message in the controllers onboard memory and advance to the next message line.

- Enter "N" to return to edit mode. This will also advance the message to the next one (if you were editing message 1, you will now be at message 2).

Note: The Road Alert^{TM} Message Sign has the ability to display several message formats (ex. Scrolling, rolling, flashing). The format of each individual message determines how it is displayed by the device. See the section "**Creating Message Effects**" for information on how to obtain various effects.

5. **Repeat set 4** until all messages have been downloaded or edited to the controller memory.

6. To exit keyboard mode, **press** the ON/OFF button,

Figure 2

Figure 3

Figure 4

Figure 5

To Load Messages via USB Thumb Drive

Refer to the Road Alert^{TM} Message Manager Programming Manual to create the message this is necessary to create the correct message syntax. Not using the RAMM program to create the text files will result in the files not loading properly into the Road Alert controller.

1. **The controller must be connected to a message device (the RA LED Sign) and the device must be connected to power and ground prior to loading messages.**

2. **Ensure** the power to the controller is off (press ON/OFF button).

3. To initiate the interface:

    - **Press and hold** the "**SCROLL ↓**" button (Figure 2).

    - **Press and release** the "ON/OFF" button. The controller will respond by displaying the message "**D&R Electronics**."

    - Release the "**SCROLL ↓**" button. The controller will respond by displaying the message "**Connect Keyboard or thumb drive**" (Figure 3).

    - Connecting the Thumb drive will bring up the first text file on the drive. Using the "**SCROLL ↓**" button on the controller will display the text files on the Thumb drive (Figure 4)   The displayed file will be the one loaded when the store button is pressed.

    - **Press the "STORE"** button to load and save the message file into the controller (Figure 5)

    - Turn OFF the controller and remove the USB thumb drive.

NOTE:

Loading a new text file will always overwrite the existing files in the RA Controller memory location. To erase all messages in the RA controller memory simply create a blank text file (using the RAMM program) and load it into the RA controller using this procedure.

To modify a single line or add another message line, use the Keyboard procedure. This will write directly to the onboard memory of the RA controller. Follow the steps outlined in the keyboard.

Creating Message Effects

The RA20 (eight character) and RA40 (sixteen character) devices provide a contiguous array of LEDs capable of displaying each character in 35 pixel resolution. The micro-processor has built-in effects that are triggered based on the configuration of the message. The user is advised to experiment with different message configurations in order to create the desired overall effect, **The following common effects are detailed and are required if the message programming is done by USB Keyboard only.**

Note: Messages move from right to left on the sign only.

1. **Fixed Message**—to have a message appear continuously on the sign, the message must be equal to or shorter than the maximum display size (i.e. for the RA20 a message eight (8) characters or less.

2. **Scrolling effect**— created by entering a single line message which is greater than the maximum display size. The message will scroll across the device from right to left.

3. **Rolling effect**—created by entering a series of message lines separated by a "line break." When entering a message via the keyboard interface "line break" is created by ending each line by pressing the "Page Down" key on the keyboard. Each line must be less than or equal to the maximum display size for the device.

4. **Flashing**—This effect is created by entering a rolling message with the same message line repeated. To vary the flash speed leave a blank message line between repeat lines.

   Note: Each message line must contain at least one character. To create a "blank" line press the "SPACE" bar on the keyboard, followed by the "PAGE DOWN" key.

5. **Directional arrows**—may be created in messages by using character combinations as follows:

   • Left arrow no tail type "<" (Shift ,)

   • Right arrow no tail type ">" (Shift .)

   • Left arrow short tail type "<-" (Shift , followed by -)

   • Right arrow short tail type "->" (- followed by Shift .)

Extend the tail by adding additional "-" characters. As an alternate format use the "=" character as a tail.

To COPY Messages from TOUCHPAD to USB thumb drive

In order to copy the message list stored in the touchpad to a USB drive, follow these steps:

1. **The controller must be connected to a message device (the RA LED Sign) and the device must be connected to power and ground prior to copying the messages**.

2. **Ensure** the power to the controller is off (press ON/OFF button).

3. To initiate the interface:

   • **Press and hold** the "**SCROLL ↓**" button (Figure 2).

   • **Press and release** the "ON/OFF" button. The controller will respond by displaying the message "**D&R Electronics**."

   • Release the "**SCROLL ↓**" button. The controller will respond by displaying the message "**Connect Keyboard or thumb drive**" (Figure 3).

- Connect the Thumb drive to the touchpad.

- Press "**DISPLAY**"

- The touchpad screen it will show:

  - on line 1: "**SAVE TO FILE**"

  - on line 2: "**MESSAGE 1**:

Which means that the touchpad prompts the user to save the existing messages on the USB stick in a file named "**MESSAGE 1**." Using the "**SCROLL ↓**" button, the number in the file name can be changed to 2,3,....9.

- Once the messages file name is selected, **press the** "**STORE**" button to lead and save the message file into the USB thumb drive (Figure 5).

- Turn OFF the controller and remove the USB thumb drive.

- If there is a need to change the saved messages, open the file into the RAMM software.

Road Alert Message Manager (RAMM)

Introduction

The *Road Alert Message Manager* (RAMM) application is designed as an easy to use, convenient, Windows based interface to create messages for the Road Alert LED Sign controller. With the ability to create and maintain multiple message lists, *RAMM* facilitates a central repository of messages. Lists can be maintained for multiple functions and can be quickly and easily downloaded to a **Road Alert** controller compatible with RA-20 or RA-40 Road Alert Message Signs.

Messages may be maintained independent of the controller and quickly uploaded via a USB thumb drive. By maintaining a library of usage specific message lists, the Road Alert LED Message sign can be adapted and used effectively in a multi-function environment.

System Requirements

Operating System: Windows 98SE/2000/XP/VISTA, Windows 7 or up

Available Disk: 8.72 MB

Ports: USB 1.1,2.0 or 3.0

Screen Resolution: minimum 1028 x 768

Note: RAMM requires the .NET framework. If it does not pre-exist you will be required during the installation procedure to install it.

Software Installation

The RAMM software is distributed on our web site. To install on a compatible computer proceed as follows:

1. Download the software from the following location;

    * http://www.dandrelectronics.com

    * On the left side of the screen select **POLICE, FIRE & EMS**

    * Then select **Traffic Directors**

    * Then select **Message Sign**

    * Then click on the RA-R-20 Icon

    * On the RA-R-20 page, click on the **Installation Manual** link.

- A download window will pop up. Save the RAMMSetup.zip fil to your hard drive.

- Unzip the files in a suitable location on your computer's hard drive

The RAMM software requires the .NET framework. This is normally installed in more current operating systems. If you have previously installed the .NET framework, proceed to step 3.

2. Navigate to the location of the unzipped files:

Install dotNET using the following method:

- Click the "BROWSE" button to display the standard Windows selection window.

- Navigate to the hard drive location.

- Select the folder named "RAMM SETUP."

- Select the folder named "dotNET Framework Installer."

- Run program called "dotnetfx."

3. Install the RAMM software using the following method:

- Click the "BROWSE" button to display the standard Windows selection window.

- Navigate to the hard drive location

- Select the folder named "RAMM SETUP."

- Select the folder named "RAMM Setup."

- Run program called "Setup."

- Follow instructions given during installation procedure.

Note: During the installation procedure you will be prompted to indicate the folder that the RAMM software will be installed in . By default, the RAMM software is installed in:

Program Files\Road Alert Message Manager\

After successful installation, the RAMM program may be accessed via:

1. The Road Alert Message Manager shortcut on your Windows desktop.

2. The Windows Start Menu as follows:

- **Click** "Start"

- **Click** "Programs"

- **Click** "Road Alert Message Manager"

Figure 6

How to Login

RAMM is password protected to ensure only authorized personnel have access to message lists. When you activate the RAMM software the RAMM flash window will display momentarily and you will be presented with the "Main Login" window (Figure 7).

Note: When RAMM is initially installed the Administrative username/password is set to the factory default. We recommend that on first use you set the defaults to a different username/password.

To access the RAMM application after activating, proceed as follows:

1. **Enter** a valid username (Use "GUEST" as default admin)

2. **Enter** the password associated with the username (Use "1111" as password for default admin).

Figure 7

Note: The password field is masked to ensure privacy.

3. **Double click** on a action button to activate it.

Use names and passwords must conform to the following criteria:

- Minimum 4 characters

- Maximum 8 characters

- Case sensitive (ex. "guest" is not the same as "GUEST")

- No special characters

Available actions from the main login are:

- **Login** will cause the main application window to display, allowing the user to create and maintain message lists.

- **Exit** will close the application.

- **User Setup** will cause the user setup window to display allowing the user to create and maintain system user accounts.

Note: Only the "Administrator" may create/maintain other user accounts.

How to Create/Maintain User Accounts

Selecting the "User Setup" button on the Login window causes the User Setup window to display (Figure 9). The window consists of two input fields, three action buttons and the Administrator check box.

Note: This window may only be accessed by the **Administrative** account

Figure 8

To **Change the Administrative** Account:

1. **Enter** a username

2. **Enter** a password

1. **Check** "Update Administrator" Check box

2. **Click** "Add/Update User" to modify record.

Note: ***********WHAT

To **Add/Modify** a User Account:

1. **Enter** a username

2. **Enter** a password

3. **Click** "Add/Update User" to add/modify record

Note: If account already exists a window will appear asking "Are you sure you want to modify the user's login info?" **Click** "Yes" to update the account and return to window. **Click** "No" to return to window and not update the account.

To **Remove** an Account

1. **Enter** the username

2. **Click** "Remove User" button to delete record.

Note: If account already exists a window will appear asking "Are you sure you want to delete the user's login info?" **Click** "Yes to remove the account and return to the window. **Click** "No" to return to window and not remove the account.

To **Return** to Login Window

1. Click "Return to Login" button. This will bring you back to the RAMM Login Window.

How to Create/Maintain Message Lists

Selecting the "Login" button on the Login window cause the Message List Maintenance window to display (Figure 9). From this window the user may perform the following functions:

1. Create a new list

2. Add/Change/Delete individual messages in a list

3. Upload a list to the controller

4. Download a list from a controller

The RA-4000 series control unit supports two message types:

1. Scrolling—allows input of a single message up to 112 characters which will scroll right to left on the device. Message must contain at least one printable character.

2.   Rolling—allows for the input of three (3) message lines which display one at a time from line one thru three in a continuous fashion.

Note: RA20 devices support eight (8) character lines. RA40 devices support sixteen (16) character lines.
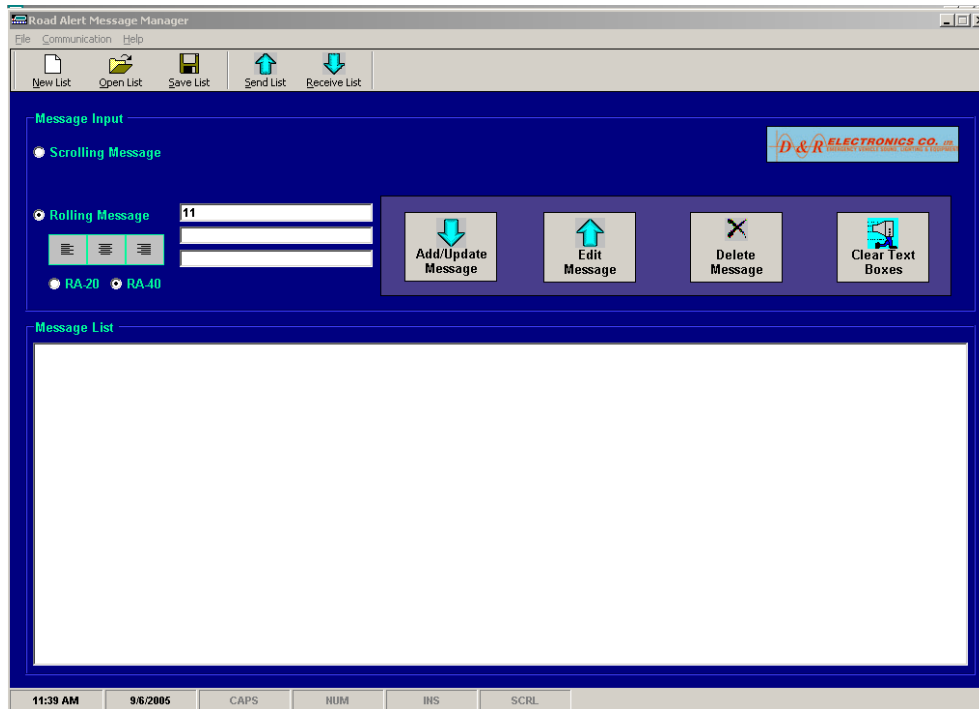

Figure 9

When the window is first displayed it is in "Create New List" mode. The default message type is set to "scrolling" and focus is set to the message edit box.

To **Create** a New List:

1.   In the Menu bar, select File/New **OR** in the tool bar, select the "New List" icon **OR** press CTRL + N.

The program will default to the "Scrolling Message" radio button and display the 112 character message entry box.

To **Open** an Existing List

1.   In the Menu bar, select File/Open **OR** in the tool bar, select the "Open List" icon **OR** press CTRL + O.

1. The standard windows file search window will open allowing you to locate the list file you wish to open. Select the file and open it as you would in any other windows application.

2. Once a list is selected and opened the RAMM application will:

   a. Display all the messages on the list in the message display area

   b. Set the "Scrolling Message" Radio button "on"

   c. Set focus to the message input box

To **Add a Message** to a List

1. **Select** the message type by clicking the radio button:

   a. Scrolling Message—will display a 112 character message entry box

   b. Rolling Message—will display three (3) message entry boxes. By default message lines will be eight (8) characters to support display on a RA20. To enter sixteen character message lines (supported by RA40) use the radio button to toggle between formats. When in Rolling Message mode each message line may be aligned left, center or right using the alignment icon located under the radio button (Figure 10). Once selected the alignment applies to all subsequent rolling message lines. Default alignment is left.

   Note: Attempting to display a sixteen (16) character message line on a RA20 will result in the last (rightmost) eight (8) characters being truncated.

1. **Enter** the message in the message entry box.

2. Use the "tab" key or the mouse to **select** the "Add/Update Message" icon

3. **Click** to add the message to the list.

4. When the message has been successfully added, focus will be set to the message entry box and contents cleared.

Note: New messages are always added to the end of the list. There is no method of re-ordering messages or inserting messages into the middle of the list.

Figure 10

<div style="border: 1px solid black;">

Warning

1.   Messages must contain at least one printable character (a space is a printable character)

2.   The ";" is a special cjaracter and may not be used within the message.

</div>

To **Delete a Message** from a List

1.   **Move** the mouse pointer to the desired message in the list. **Select** by clicking the right mouse button.

2.   Use the "tab" key or the mouse to **select** the "Delete Message" icon.

3.   **Click** to remove message from list.

4.   The message will be deleted from the list in the message display area.

To **Edit a Message** in a List

1.   **Move** the mouse pointer to the desired message in the list.

2.   **Select** by:

    a.   **Double clicking** the left mouse button

    b.   Use the "tab: key or the mouse to **select** the "Edit Message" icon.

    Note: The message will display in the message edit box and focus will be set to the message edit box. Access to other messages in the list is restricted until the selected message edit is completed.

3.   **Modify** the message as required.

4.   When editing is complete, use the "tab" key or the mouse to **select** the "Add/Update Message" icon.

5.   **Click** to replace the original message with edited version in the list.

6.   The new message will display in the message display area and the message edit box will be cleared. Focus will be set to the message edit box and you may access all messages in the list.

To **Clear Message Text Boxes**

The message edit box may be cleared at anytime. Clearing the box will abort any edit operations in progress. It has the same effect as placing the cursor at the end of the edit string and using the "Backspace" key to delete all charters in the field. To clear the message box proceed as follows:

1.   Use the "tab" key or the mouse to **select** the "Clear Text Boxes" icon.

2.   **Click** to clear message text boxes.

3.   The message text boxes will be cleared and focus set to the first message text box.

To <u>**Save a Message List**</u>:

Message lists may be saved either implicitly as a result of some action or explicitly by executing the save function.

<u>To Implicitly **Save a Message List**</u>:

The message lists may be saved implicitly as a result of one of the following actions:

1.   Attempts to close the application with a list active in the message display area.

      Yes—close the application with a list active in the message display area.

      No—will cause the active list to be saved before closing the application.

      Cancel—aborts the operation and returns focus to the message edit box.

2.   Attempts to create a new list with a list active in the message display area.

3.   Attempts to open a an existing list with a list active in the message display area.

      Yes—results in the currently active list being saved with all additions, deletions and modifications made since last save, prior to the operation being performed.

      No—results in the currently active list not being saved prior to the operation being performed.

      Cancel—aborts the operation and returns focus to the message text edit box.

<u>To Explicitly **Save a Message List**</u>:

The message list may also be saved as a result of an explicit save operation. To save explicitly do the following:

- In the Menu bar, select File/Save **OR** in the tool bar, select the "Save List" icon **OR** Type CTRL + "S."

<u>To Explicitly **Save a Message List and Assign List Name**</u>

Any save operation which is the first time saving of a list will cause the Save As dialogue to be displayed. You may also explicitly cause a Save As operation by **selecting** File/Save As in the menu bar.

The standard Windows save file dialogue window will appear allowing you to select the folder and file name to save the list.

Note: Message list files are formatted as .txt files. D&R Electronics recommends you create a separate folder to store the message list files.

To **Create Message List from Existing List**

You can use an existing list as a template for a new list as follows:

1. **Open** an existing list.

2. **Add, Edit and Delete** messages from the list.

3. **Save** the message list using the Save As function.

Creating Message Effects

The RA20 (eight character) and EA40 (sixteen character) devices provide a contiguous array of LEDs capable of displaying each character in 35 pixel resolution. The micro-processor has built in effects that are triggered based on the configuration of the message. The user is advised to experiment with different message configurations in order to create the desired overall effect. The following common effects are detailed.

Note: Messages move from right to left on the sign only.

1. **Fixed Message**—to have a message appear continuously on the sign, the message must be equal to or shorter than the maximum display size (ex. Eight (8) characters or less for the RA20.

2. **Flashing**—This effect is created by entering a rolling message with the same message line repeated. To vary the flash speed leave a blank message line between repeat lines.

Note: Each message line must contain at least one character. To create a "blank" line press the "SPACE" bar on the keyboard, followed by the "PAGE DOWN" key.

3. **Directional Arrows**—Directional arrows may be created in messages by using character combinations as follows:

- Left arrow no tail; type "<" (Shift ,)

- Right arrow no tail; type ">" (Shift .)

- Left arrow short tail type "<-" (Shift , followed by -)

- Right arrow short tail type "->" (- followed by Shift .)

Extend the tail by adding additional "-" characters. As an alternate format use the "+" character as a tail.

How to Communicate with the Controller

To be used with the RA20 or RA40 devices message lists must be uploaded to the controller memory.

NOTE: This can only be done with a USB thumb drive. DO NOT CONNECT the Road Alert Controller to the USB port of the computer.

1. **Locate the saved test message and copy it to a formatted USB thumb drive**

2. **USE the procedure in the user's manual to load the RA controller.**

Application Hot Keys

The RAMM program functions may be accessed from the keyboard without the use of a mouse by entering specific "hot key" combinations. Refer to the following table for valid "hot keys."

Hot Key	Function
Ctrl N	New list
Ctrl O	Open an existing list
Ctrl S	Save active list
Ctrl X	Exit RAMM
Ctrl U	Upload active list to controller
Ctrl R	Download list from controller
Ctrl F1	Display PDF of this manual
Ctrl A	Display information about RAMM

General Warning

1. The use of emergency warning devices does not ensure the safety of the operator. The operator is responsible to ensure safe operation of the vehicle regardless of whether the warning device is in operation or not.

2. The effectiveness of this or any warning device is highly dependant on proper installation and maintenance. Read the manufactures instructions before installing and follow all recommendations.

3. When in use the operator must ensure that the warning signal is visible and not obstructed by vehicle components (i.e. open trunk lid), people or other obstructions.

4. This device is intended for use by authorized personnel only. The user is responsible for ensuring that all local, state/provincial and federal laws are being complied with. D&R assumes no liability for any loss resulting from the use of this device,

5. The device must be installed so as not to reduce the output performance of vehicle systems.

6. Placement of control switches must be so as to provide convenient reach for the operator while maintaining eye contact with the road.

7. Emergency warning devices require high electrical voltages and/or currents. Properly connect and ground all circuits. Shorting or improper grounding of this device may cause personal injury, vehicle damage or both.

8. All operators should be properly trained in the operation of this device to ensure both their and public safety.

Installation and Mounting

Warning

1. Any device used inside a vehicle may cause severe personal injury if not properly mounted and secured. Objects used in the vehicle may become airborne during a collision or other sudden changes in vehicle speed or direction, such as breaking acceleration or turning.

2. Be sure to mount unit through the steel of the vehicle. Avoid mounting through plastic or other non-structural materials.

3. POINT OF INSTALLATION MUST NOT INTERFERE WITH DEPLOYMENT OF VEHICLE AIRBAGS

4. D&R Electronics recommends tis or any of our products be installed by qualified professionals.

Mechanical Installation
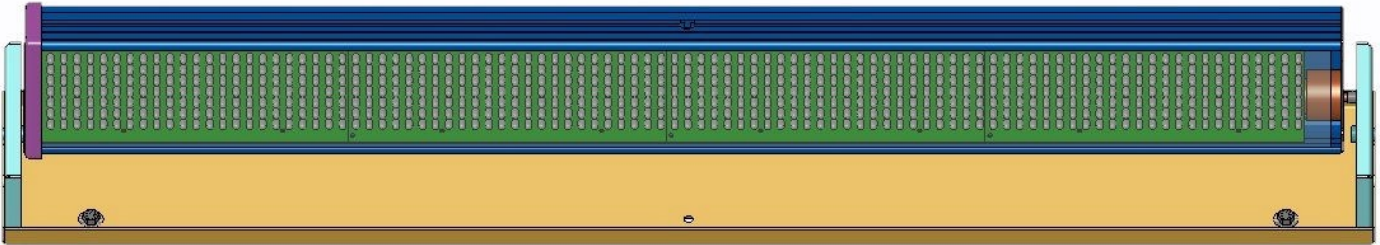
Motorized Road Alert

Figure 11

Step 1

Decide an appropriate location for mounting (center of rear deck is recommended) and mark four drill holes. Use custom bracket or rubber legs (not supplied) and balance to the surface. Align holes and secure road alert on the bracket or rubber legs fit it with supplied nut, bolt and washer similar to figure 12 and 13.
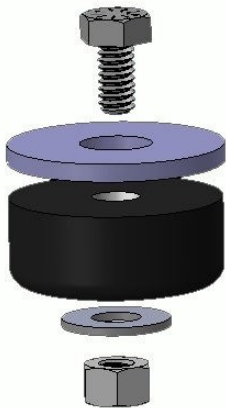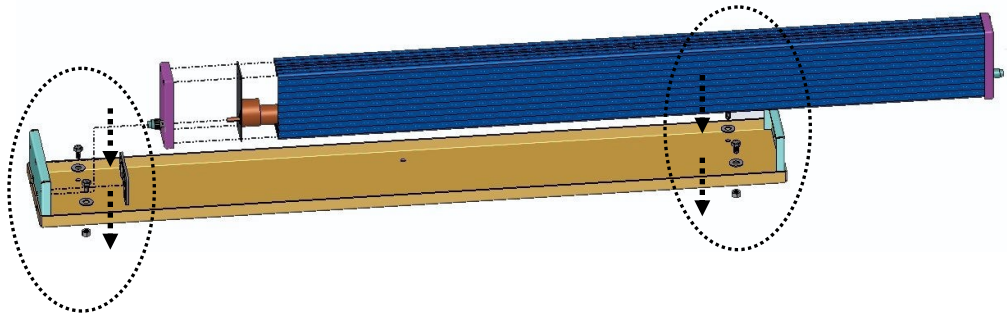

Figure 12

Figure 13

Note: It is strongly recommended not to install motorized road alert outside of the car.

Step 2

Connect the pigtail cable to the 20 ft. extension cable and route beneath roof or behind the door cover to the desired location.

Step 3

Mounting bracket for touchpad is supplied with package. Open both sides screws of mounting bracket and separate top and bottom side as shown in figure 14.

Figure 14

Step 4

With supplied screw and washer, fit fit the touch pad with the one side of bracket as shown in figure 15. Secure the other bracket on deck or desired location and attach both brackets as it were before as shown in figure 16.
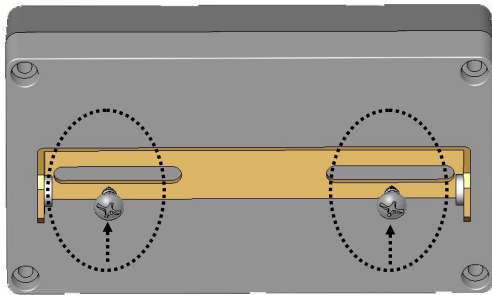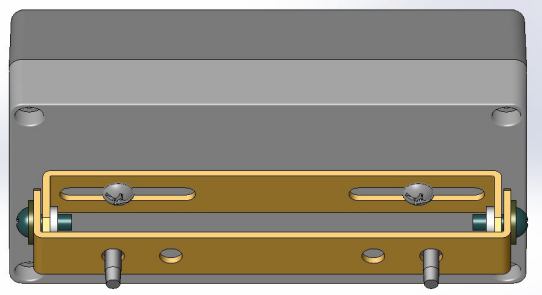

Figure 15

Figure 16

Step 5

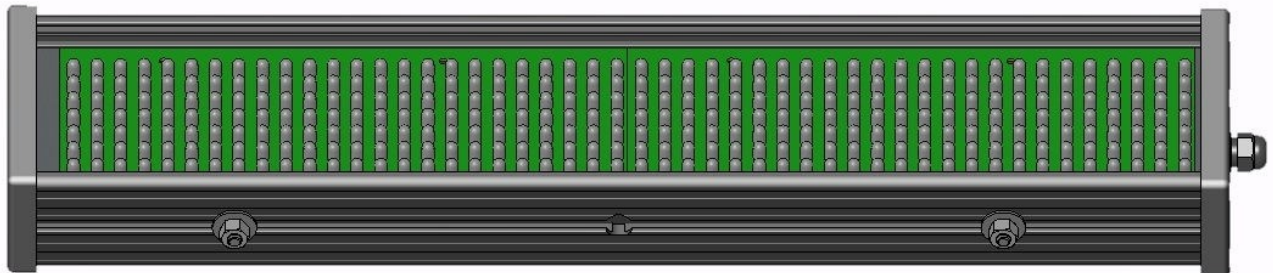Connect the routed cable from the Road Alert to the side of the touchpad

Figure 17

Step 1

Decide an appropriate location for mounting and mark two drill holes. Use custom bracket or rubber legs (not supplied, as shown in figure 12) and balance to the surface. Align holes and secure road alert on the bracket or rubber legs. Fit it with supplied nut, bolt and washer similar to figure 18.
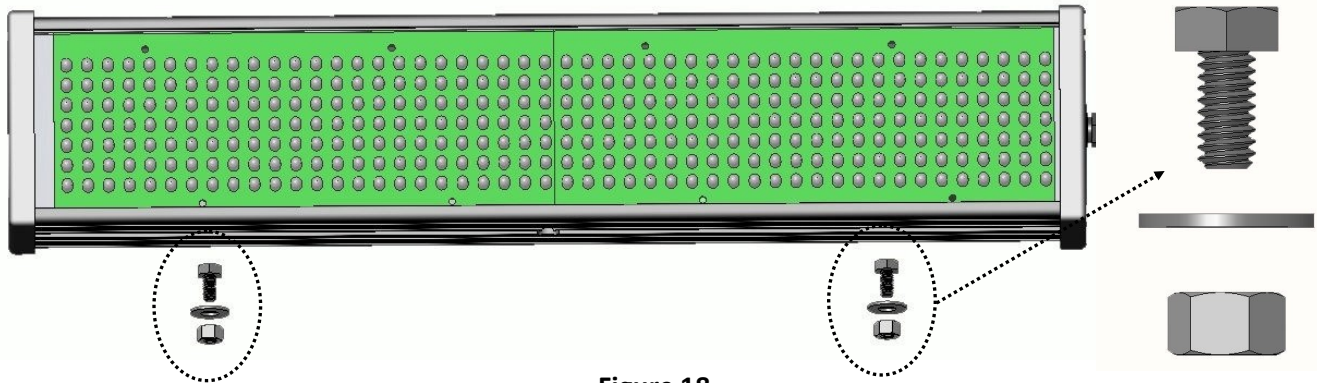

Figure 18

Alternate Option

Decide an appropriate location for mounting and mark 8 drill holes. Use supplied bracket (as shown in figure 12) and balance to the surface. Align hole and secure road alert on the bracket with supplied nut, bolt and washer similar to figure 19.
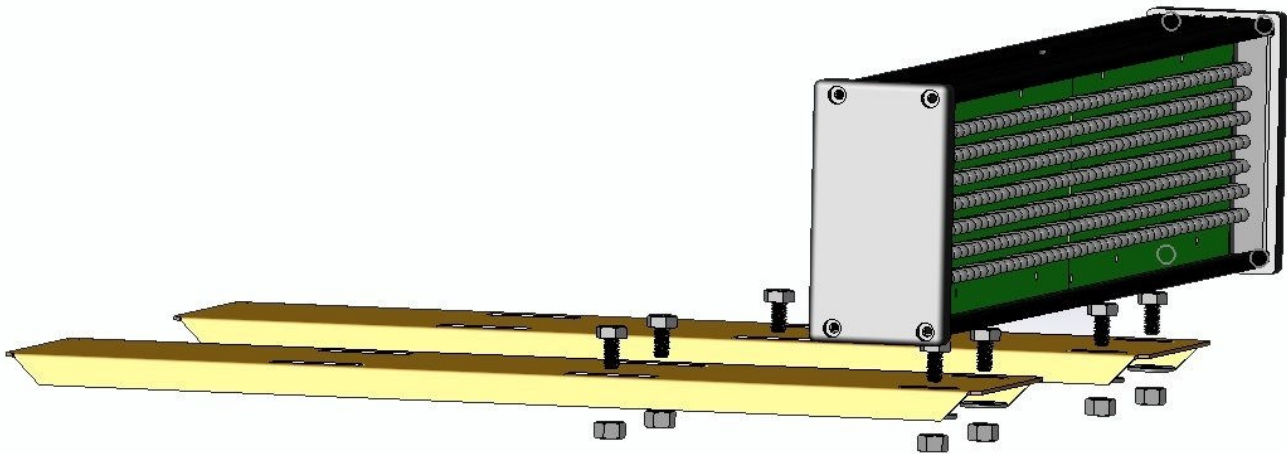

Figure 19

Step 2

Make a drill hole to the size of strain relief. Connect the pigtail cable to the 20 ft. extension cable to pigtail of harness, and route beneath roof or behind the door cover through the drilled hole on roof of the car to the desired location.

Step3

Mounting bracket for touch pad is supplied with package. Open both sides screws of mounting bracket and separate top and bottom side as shown in figure 20.

Figure 20

Step 4

With supplied screw and washer, fit the touch pad with the one side of bracket as shown in figure 21. Secure the other bracket on deck or desire location, and attached both brackets as it were before as shown in figure 22.
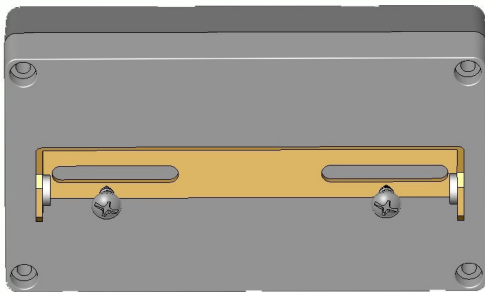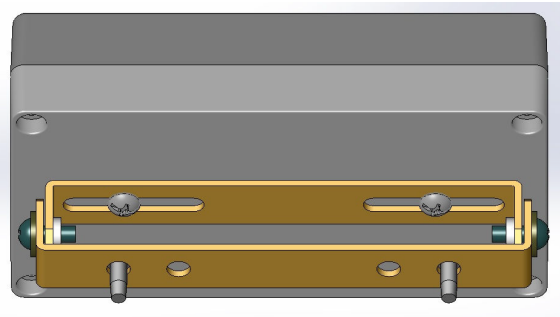
Figure 21   **Figure 22**

Step 5

Connect the routed cable from the Road Alert to the side of the touchpad.

WARRANTY

D&R Electronics warrants its new products to be free from defects in material and workmanship, under normal use and service, for a period of one year on parts replacement, and one year on labour. This warranty applies only to original purchasers acquiring the product directly from D&R Electronics, or its authorized dealers. Warranty will not be recognized without proof of purchase or bill of sale. This warranty is not transferable. The warranty begins on the date of delivery to the first user/purchaser. This warranty shall not apply to products which must be repaired due to normal wear and tear, negligence, improper installation, abuse, misuse, or which have been altered or modified at a facility other than D&R Electronics, or its authorized depot center. Units proved to be defective within the warranty period, based on an examination by D&R Electronics, will be replaced or repaired at D&R Electronics' option. This warranty does not cover travel expenses or labour charges for removal or installation. Lamps, flash tubes, batteries or other items considered consumables are not covered under warranty. This warranty is in lieu of all other express warranties. D&R Electronics makes no other warranties, expressed ir implied, than the express warranties contained herein.

PRODUCT RETURN POLICY

In order to provide you with faster service, product returns for repair or replacement, must have a Return Goods Authorization Number (RGA number). Please contact our company to obtain a RGA number before you return the product to D&R Electronics. Write the RGA number clearly on the package. Be sure you use sufficient packing materials to avoid damage to the product being returned while in transit.

D&R Electronics assumes no responsibility or liability for expenses incurred for the removal and/or the installation of products requiring service and/or repair. Repairing or replacing product is at the discretion of D&R Electronics.

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