



**Smart Touch Version 2.0  
Installer's Manual**

# Smarttouch Version 2.0

## Table of Contents

What's New in Version 2.....	3
System Components.....	4
Installation Instructions.....	5
Software Setup.....	5
Seven Inch (Passenger) Screen Setup.....	6
Show/Hide Options.....	7
Entertainment Setup.....	9
Attached to this screen / On another screen.....	9
Training the Universal IR Remote Control buttons.....	10
Lighting Setup.....	11
Set Light Type.....	13
Dimming Rate.....	13
Setup Output.....	13
Climate Setup.....	18
Auto Climate Setup.....	18
About.....	22
Erase Cache.....	22
Re-Start TCP.....	22
Reset IOM.....	22
Exit.....	22
Four Inch (Driver) Screen Setup:.....	23
Setup Lighting.....	24
Setup Partition.....	25
Entertainment Setup.....	25
Setup Automode.....	25
Diagnose.....	26
Erase Cache.....	27
Show-Hide Options.....	27
Faults.....	28
File Copying:.....	29
HVAC Relay board.....	30
Hardware Setup.....	31
Troubleshooting:.....	32
IOM System Backup.....	34

## What's New in Version 2

### Automatic Temperature Control

- An external temperature sensor option has been added to the seven inch display. This allows for Automatic climate temperature control. See the "Climate Setup" instructions to activate this function.

### Universal Remote Control

- A Infrared Receiver (IR) has been added to the seven inch display. This allows the seven inch screen to work as a Universal Remote Control that controls any stereo or TV that comes with an infrared remote. See the "Entertainment Setup" instructions to activate this function.

### External Switches

- Control any channel with external switches (sold separately), as well as from the touchscreens.

#### **And more...**

- Updated Graphics
- Improved Performance
- Upgraded system setup options.
- Ability to show or hide any unused button category's.
- Increased Current capacity on the Lighting channels.
- Upgraded 'Jumpstart' Logic to prevent false triggers.
- Re-designed gaskets on touchscreens.
- External Switches (sold separately)
- HVAC relay board (sold separately)

# System Components

A: 4.3" Driver's Screen



B: 7" Passenger's Screen



C: Input/Output Module (IOM)



IOM (Covers removed)



## Included Accessories:

- Wire harnesses
- Universal Remote Control Transmitter
- Temperature Sensor (Thermistor)
- Intercom Speakers
- Intercom Microphones

## Optional Equipment:

- Wifi Module
- Litesync RGB Module
- External switches

# Installation Instructions

## Software Setup

Each touchscreen that is attached to the system will need to be configured individually. Due to smaller screen on the Driver display, the majority of the system setup is done on the larger seven inch Passenger display.

The IOM Stores the information needed for the Lighting channel setup and the Climate setup. The Touchscreens and Wifi module will automatically receive the Light channel names from the IOM.

Configuration that only needs to be done from a Passenger Screen:

- Lighting channel names and output selection
- HVAC output configuration

Configuration that must be performed on each screen and Wifi Module attached to the system:

- Showing or Hiding the Partition screen, and which Partition selections to display.
- Showing or Hiding the Automatic Climate control.
- Showing or Hiding the Climate screen.
- Showing or Hiding the Entertainment Screen, and which screen is displayed
- Showing or Hiding the Intercom screen.

## Seven Inch (Passenger) Screen Setup

To enter Setup Mode, press and hold the top left corner on any screen. A keypad will appear on the screen to allow you to unlock Setup Mode.

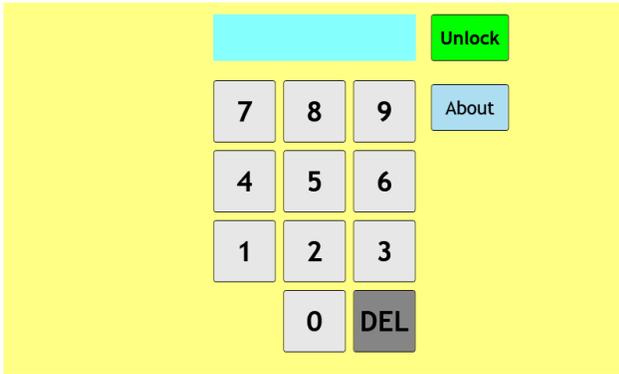


Figure 1: Unlock Screen

After entering the setup code, the Smarttouch System Setup screen will appear.

Enter the setup code '8191' and then press 'Unlock' to unlock the screen and enter setup mode.

Press the 'About' button to get System version information and serial numbers.

(Note: To copy files from a USB drive onto the system, insert a the USB drive. The same keypad will appear. Again, use code '8191' to enter file copy mode. Other options are '8670' to upload new software to the Touchscreen, or '8671' to upload new software to the IOM. See the Appendix for more information.)

## Smarttouch System Setup

Each option is described in detail in the following pages. Here is a quick overview:

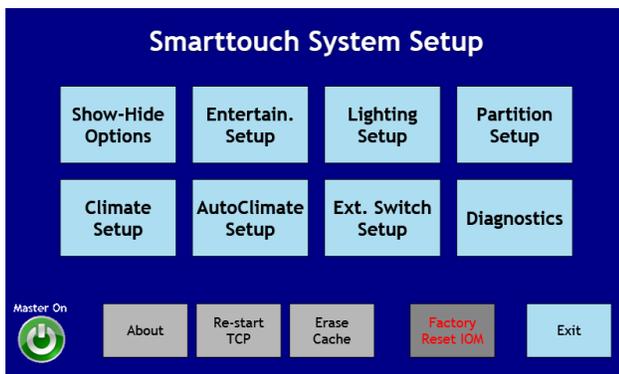


Figure 2: Smarttouch System Setup Screen

**Show/Hide Options** – Select which button options display at the bottom of each screen.

**Entertainment Setup** – Select the remote control button layout and learn remote control commands.

**Lighting Setup** – Name and Configure lighting channels.

**Partition Setup** – Select partition options to display.

**Climate Setup** – Setup HVAC fans and modes.

**AutoClimate Setup** – Enable or disable AutoClimate Mode.

**Ext. Switch Setup** – Configure External Switches.

**Diagnostics** – Clear faults from channels.

**Master On/Off Button** – Turn the IOM Master Power On or Off.

**About** – System Information and Version Numbers.

**Restart TCP** – Restarts this Touchpanel.

**Erase Cache** – Clear the graphics cache to fix any display issues after updates have been made.

**Factory Reset IOM** – Reset the IOM back to factory defaults. Removes all IOM customizations, such as lighting channel names, HVAC setup, Auto-Climate Setup, External Switch setup, etc. You should make a backup of all your settings before using this option.

**Exit** – Exit Setup mode / Return to normal mode.

## Show/Hide Options

This will allow you to choose which buttons will be displayed on the bottom of the screen.

The options are: Entertainment, Lighting, Climate, Intercom, and Partition. For each option, there is one screen that will allow you to 'Show' or 'Hide' that option. The 'Dim Screen' button cannot be hidden.

### Show Entertainment:



Figure 3: Show Entertainment Screen

The first option is to Show or Hide the Entertainment Button. If you do not have a TV or Radio that is controlled by the Smarttouch system, you can hide this option. Select Show or Hide to advance to the Lighting Button selection, or Exit to return to the Setup menu. The content of the Entertainment page is configured in the 'Entertainment Setup' screen from the main setup page.

### Show Lighting



Figure 4: Show Lighting Screen

If you are not using the Smarttouch system to control any lights, you can hide the Lighting button. Select Show or Hide to advance to the Show Climate option, or 'Back' to return to the Show Entertainment Option. Lighting channels names and outputs can be configured from the 'Lighting Setup' screen from the main setup page.

### Show Climate



Figure 5: Show Climate Screen

If you are not using the Smarttouch system to control the Heat and Air conditioning, you can hide the Climate button. Select Show or Hide to advance to the Show Intercom option, or 'Back' to return to the 'Show Lighting' Option. Auto-Climate mode, and HVAC/Fan configuration is done from the 'Climate Setup' or "AutoClimate Setup" page from the main setup screen.

## Show Intercom



Figure 6: Show Intercom Screen

If you are not using the built in Intercom system, you can hide the Intercom button. Select Show or Hide to advance to the Show Partition option, or 'Back' to return to the 'Show Climate' option.

## Show Partition

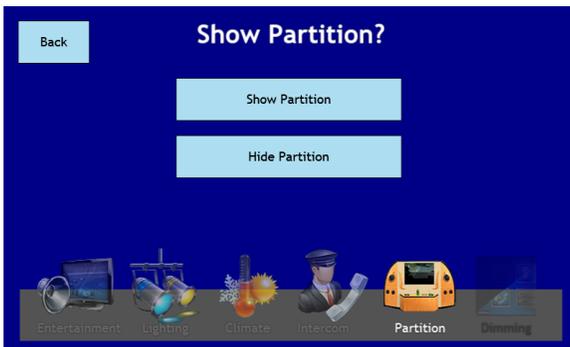


Figure 7: Show Partition Screen

If you are not using the Smarttouch to control any Partitions, Moonroof, Sliders, or Curtains, you can hide the Partition button. Select Show or Hide to go to a preview of the selected buttons.

## Selected Buttons



Figure 8: All Buttons Selected Screen

After all of the option selections are complete, the selected buttons will be displayed as a preview. Press Exit to return to the Setup screen.

Any button that you chose to hide will not be shown, and the other buttons will be realigned to fill the space.

Any combination of buttons can be shown or hidden. Below is a sample of a few options:



Hide Entertainment



Hide Lighting



Hide Climate



Hide Partition



Hide Partition/Intercom

## Entertainment Setup



Figure 9: Entertainment Setup Screen

The entertainment screen configuration will vary depending on whether the IR transmitter is attached to this Touch panel, or if it is attached to another Seven Inch touch panel in the same vehicle.

### Attached to this screen

The IR transmitter is physically attached to this Touch panel. (This is the normal case.)

### On another Screen

The IR transmitter is physically attached to another screen in the vehicle. This screen will send a message to the other screen to transmit the signal.

### IR is Not Used

There is no IR transmitter in the vehicle. Radio Power and TV Power buttons will still be shown. If you want to hide these buttons, go to the Show/Hide Buttons setup screen.

(Note: this feature does not work with Version One seven inch screens, as there is no IR detector to allow the remote codes to be learned.)

## Attached to this screen / On another screen



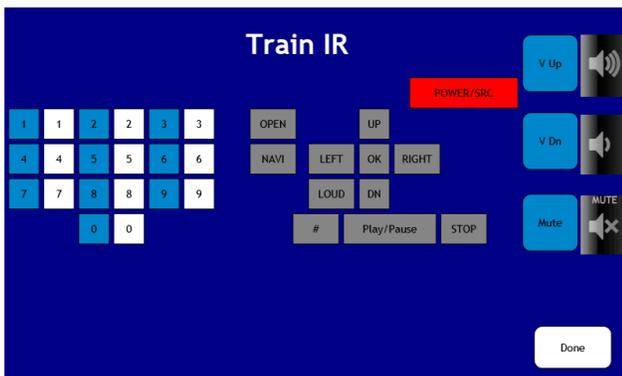
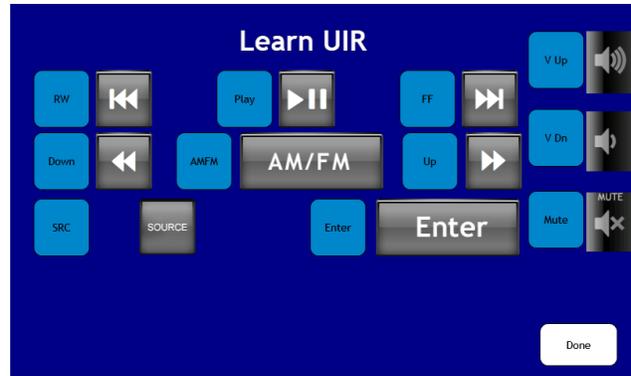
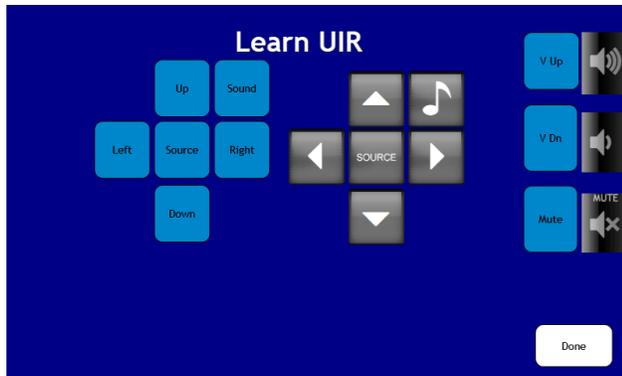
If you select either 'Attached to this Screen' or 'On another Screen', the next page will allow you to select a remote control button layout.

If you change the settings from having the IR attached to have the IR on a different screen, you will need to Re-Start the TCP from the main Setup screen.

If the IR transmitter is attached to this screen, the next screen will allow you to train the buttons for your remote.

(The actual screen in the vehicle may vary in appearance from the preview depending on the selected theme and the Show/Hide button options.)

## Training the Universal IR Remote Control buttons



### Advanced:

**To re-use the learned commands on multiple vehicles with the same radio, the commands can be stored to a USB drive. Before entering setup mode, insert a USB drive into the display, and enter code '0000' and then press 'Unlock'. This will enable the drive for storage. Now enter 'Setup Mode' the same way as before. When each new IR button is learned, a file will be written to the USB drive. These files can be copied onto a new system with the standard file copy commands. (See 'File Copying')**

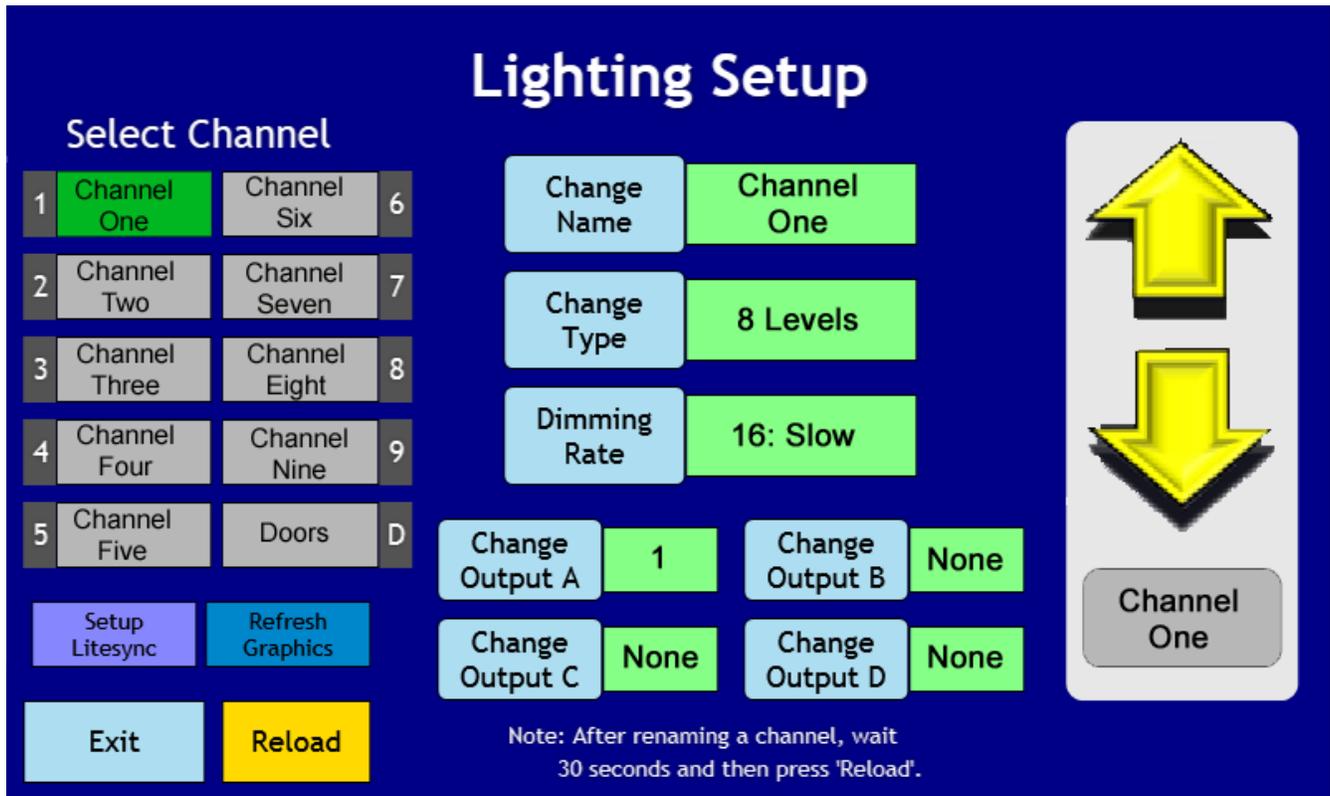
The blue buttons are the 'Learn' buttons, and the graphical buttons and the 'Send' buttons.

To the the system a button, press the blue button. The button will turn light blue when it is waiting to learn a command. Aim the remote control at the IR receiver on the left side of the display box. When the system learns the button, the button will return to the original blue color. You can then press the corresponding 'Send' button to verify the button has been learned correctly.

When all of the buttons have been trained, press the 'Done' button.

## Lighting Setup

On the left side of the screen is a list of all the lighting channels. Press the button to select the channel that you want to edit. When a channel is selected, the middle of the screen will show the options for that channel. The control on the right side will activate the channel, and will change depending on the 'Type' of the channel.



**Select Channel** - Channels one through nine can be renamed and reconfigured. 'Doors' allows you to configure which outputs are activated when the door switch is turned on. Pressing the channel name selects the channel for configuration. The buttons in the middle will change to the selected channel, and the control on the right will activate the channel.

**Setup Litesync** - allows you to configure and display controls for the Litesync module.

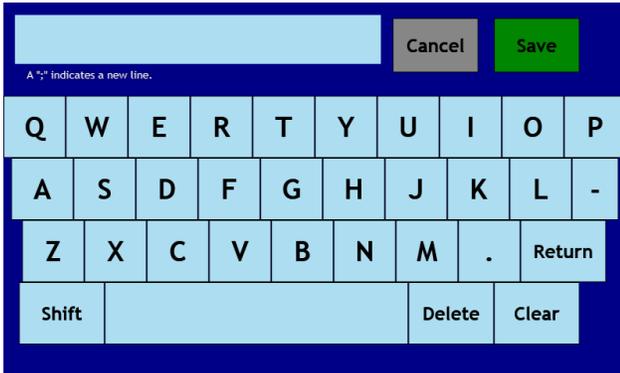
**Refresh Graphics** - Resets the graphics cache to correct any display issues after changing lighting settings.

**Change Name** – Brings up a keypad to change the displayed channel name.

**Change Type** – Changes the type of the output (ie. On/Off, Momentary, Levels)

**Dimming Rate** – Each channel can turn on and off at a fast or slow rate.

**Change Output** – Each button can control multiple outputs.

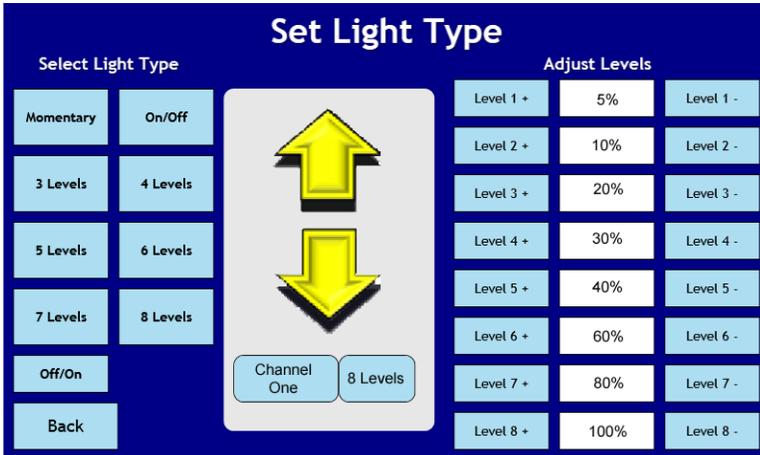


**'Change Name'** - A keypad will be displayed and you can enter the new channel name.

- 'Clear' will remove all of the current text.
- 'Delete' will delete the last character.
- 'Return' will insert a new line. Line breaks are shown as a semicolon in the edit box.
- 'Shift' will switch to upper case letters.
- 'Cancel' will undo any modifications and return to the previous screen.
- 'Save' will store the new channel name and return to the previous screen.

Once the name change is completed, the Touchscreen sends the new name to the IOM module. The IOM module will then store the new name, and then send it out to all of the attached screens and WIFI modules. It may take a few seconds for the new data to be displayed correctly on all devices.

## Set Light Type



**Momentary** - The outputs are ON only when the button is held.

**On/Off** - The outputs toggle between Full Off and Full On.

**3 Levels** – Off, 2 levels of Dimmed, or On

**4 Levels** – Off, 3 levels of Dimmed, or On

**5 Levels** – Off, 4 levels of Dimmed, or On

**6 Levels** – Off, 5 levels of Dimmed, or On

**7 Levels** – Off, 6 levels of Dimmed, or On

**8 Levels** – Off, 7 levels of Dimmed, or On

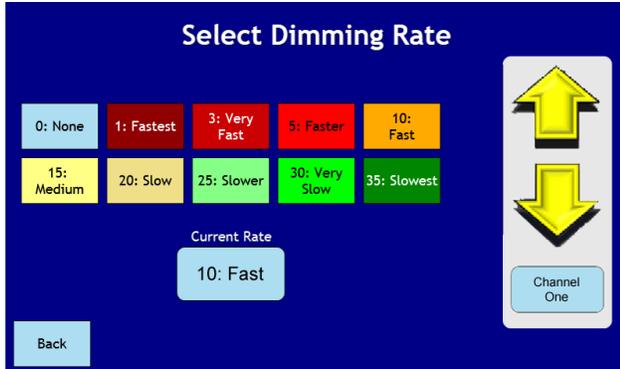
**Off/On** – Same as On/Off, but the Output is inverted. (The Output is ON when the switch is OFF)

If the type has levels, the Output level can be adjusted on the right side of the screen.

Each level can be adjusted up or down. A level cannot be set higher then the next level higher, or lower then the next level lower.

When you are done setting up the light type, select 'Back' to return to the previous screen.

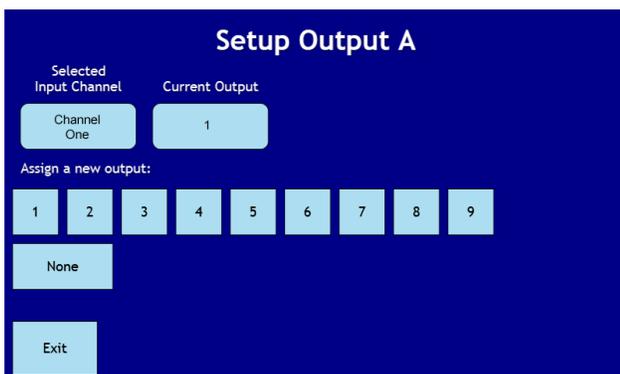
## Dimming Rate



Dimming is the amount of time the light takes to go from On to Off or Off to On.

The dimming rate can be adjusted between no dimming to very slow.

## Setup Output



Each Button can control up to four outputs, labeled A through D. The default setup is for Channel One to Control Output One, but the Button number and the Output numbers do not have to match.

## Partition Setup:

There are fourteen combinations of different partition screen selection options, depending on what you want to control. Select the button that has the combination of buttons that you would like to display.

If you would like your partition page to display an option that is not available for this setup screen, contact Infinite Innovations for assistance.

The image shows a 'Smarttouch Partition Setup' screen with a dark blue background. At the top center, the title 'Smarttouch Partition Setup' is displayed in white, with the subtitle 'Select which Buttons to draw' below it. In the top right corner, there is a white 'Exit' button. Below the title, there are three columns of options: 'A) Privacy Up/Down' and 'B) Privacy On/Off' on the left; 'C) Glass Up/Down' and 'D) Moonroof' in the middle; and 'E) Left Curtain', 'F) Right Curtain', and 'G) Both Curtains' on the right. Below these options is a grid of 14 light blue buttons, each representing a different combination of the options listed above. The buttons are arranged in four rows: the first row has five buttons (A Only, A and C, A and D, A, C, and D, A, E, F, G); the second row has five buttons (B Only, B and C, B and D, B, C, and D, A, E, and F); the third row has three buttons (C Only, C and D, E, F, and G); and the fourth row has one button (D Only).

Option	Combination
A) Privacy Up/Down	A Only
B) Privacy On/Off	B Only
C) Glass Up/Down	C Only
D) Moonroof	D Only
E) Left Curtain	A, E, F, G
F) Right Curtain	A, E, and F
G) Both Curtains	E, F, and G
A and C	A and C
A and D	A and D
A, C, and D	A, C, and D
B and C	B and C
B and D	B and D
B, C, and D	B, C, and D
C and D	C and D

Selecting 'A Only' will display only the Privacy Up/Down button. Selecting 'A and C' will show both the Privacy Up/Down button and the Glass Up/Down button, and so on.



Figure 10: Layout A: Privacy Up/Down Only



Figure 11: Layout B: Privacy On/Off Only



Figure 13: Glass Up/Down Only



Figure 12: Layout D: Moonroof Open/Close Only



Figure 15: Layout A and C: Privacy Up/Down and Glass Up/Down



Figure 14: Layout B and C: Privacy On/Off and Glass Up/Down



Figure 17: Layout A and D: Privacy Up/Down and Moonroof Open/Close



Figure 16: Layout B and D: Privacy On/Off and Moonroof Open/Close



Figure 19: Layout C and D: Glass Up/Down and Moonroof Open/Close



Figure 18: Layout A, C, and D: Privacy Up/Down, Glass Up/Down, and Moonroof Open/Close



Figure 20: Layout B,C,and D: Privacy On/Off, Glass Up/Down, Moonroof Open/Close

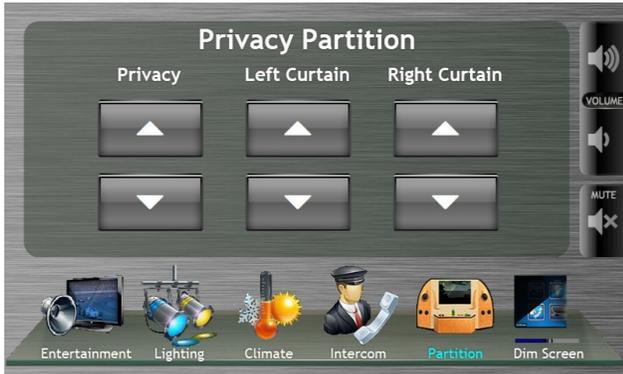


Figure 21: Layout A, E, and F: Privacy Up/Down, Left & Right Curtains

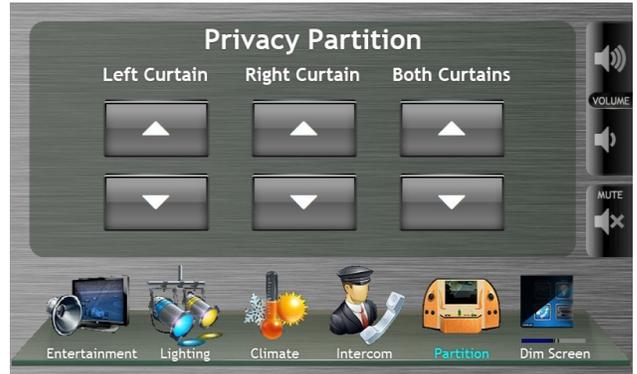


Figure 22: Layout E,F, and G: Left Curtain, Right Curtain, Both



Figure 23: Layout A,E,F,G: Privacy Up/Down, Left,Right,Both Curtains

## Climate Setup

### Blower Modes

Blowers can be configured for either PWM or Staged output.

PWM allows smooth steps between fan speeds. The motors should be wired to the High speed connectors.

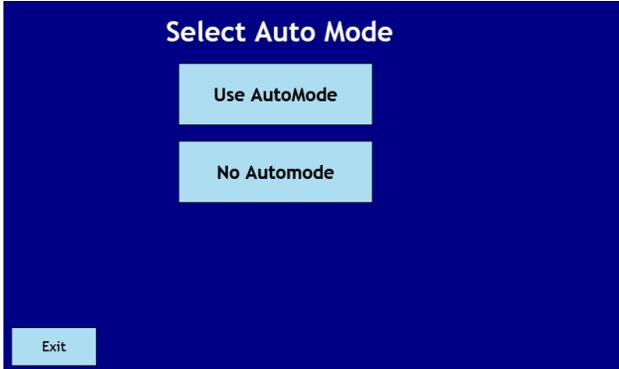
Staged output turns on the outputs in steps, for 4 fixed speeds. This is used with motors that have High, Medium, and Low speed connections and fine speed control is not wanted.



For both PWM and Staged modes, different fan outputs can be selected for when the AC is on, the Heat is on, or only the Fan is on.

The buttons on the right hand side of the setup screens allow you to test the system as you configure it.

### Auto Climate Setup



**No AutoMode** – Hide the Auto Climate Controls.

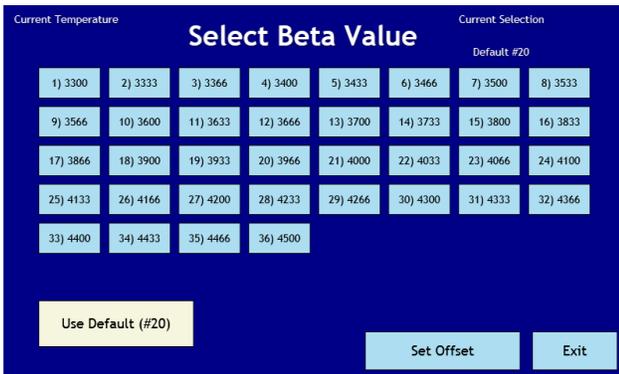
**Use AutoMode** – Display the Auto Climate Controls on the screen.

(Note: Version One of the seven inch screens cannot be updated to use this function, as the version two hardware is different.)



When 'Use AutoMode' is selected, the following two configuration options are shown:

## Setup Thermistor Beta

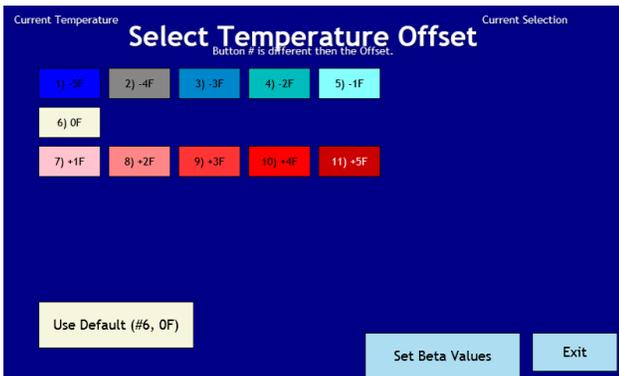


If you use the Thermistor that is shipped with the system, use the Default Value button.

Any NTC 10K Thermistor can be used with the system. Depending on the thermistor that you use, the Beta value may need to be adjusted. The Beta value is available from the Thermistor manufacturer. The default value for the factory supplied thermistor is 20) 3966. If you are using the supplied Thermistor, do not change this value.

Note: The button number is shown in the 'Current Selection' window, NOT the actual beta number.

## Set Temperature Offset



The measured temperature can be offset by up to plus or minus five degrees Fahrenheit.

Note: The button number is shown in the 'Current Selection' window, NOT the actual temperature offset.

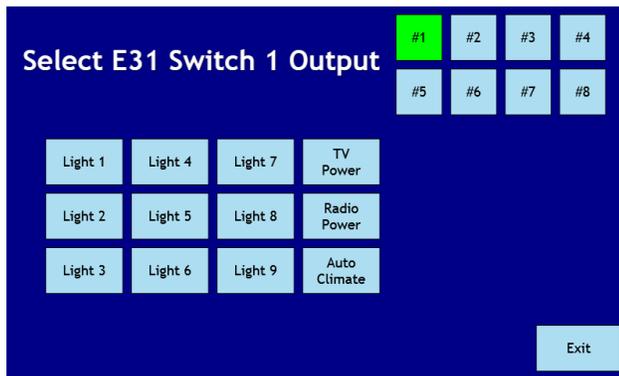
## External Switch Setup



External switch panels are now available. The switches work in parallel with the touchscreens. They provide an 'Always Available' switch options.

Select the type of switch that you have installed.

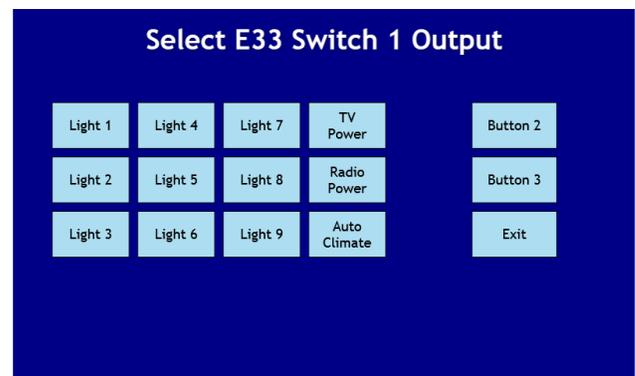
For each type of switch, the setup is the similar.



For the E31 style switch, the buttons in the top right represent the selected button. Select the desired function for that button from the list of output channels.

The selected output is not displayed, so press the switch after programming to verify correct operation.

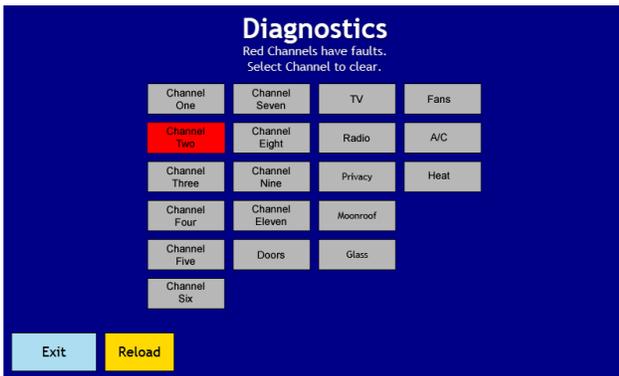
The screen is slightly different for the E33 style switch. The selected button is listed at the top of the screen. The other two switches can be selected on the right hand side of the screen. Select the desired output from the options on the left of the screen.



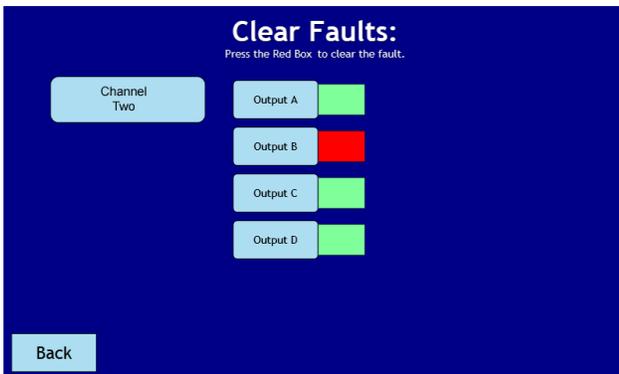
# Diagnostics

The IOM uses Smart FET technology instead of old fashion relay blocks and fuses. Every output channel is protected from Overloads and short circuits by the Smart FETs. Any channel that draws more than the allowed amount of current will automatically trip a fault for that channel. Any button that controls the faulted output will turn dark gray, and will be disabled until the fault is cleared. Clearing the fault is equivalent to replacing a blown fuse in a non-smart system. This means that no fuses are required, and they never have to be replaced.

Faulted channels can be cleared from either the Setup screen on the Passenger's Display or the Setup Screen on the Driver's display. If a channel is faulted, the cause of the fault must be fixed before clearing the fault. Therefore, the Driver is able to see that a channel is faulted, but must enter the setup menu to clear the fault.



When a fault has been triggered, it will show up as a red channel on the Diagnostics page. In this example, Lighting Channel Two has caused a fault. Press the button to see which output on Channel Two caused the fault.



The faulted output will show in red. Inspect the wires and devices that the output channel is attached to, and fix any issues. Then, to clear the fault, simply press the red button. The channel will be re-enabled, and the grayed out button will return to normal operation. If the channel faults again, there is still either a short circuit in the wiring, or the load attached is above the rating for the channel it is attached to.

## About

This will show the system version information. When troubleshooting issues, Infinite Innovations may ask you to retrieve this information. Also, before and after doing a firmware update you should take note of the reported versions. After an IOM update, you may have to re-load this page to see the updated version number. This may take a few seconds before it is updated.

## Erase Cache

The graphics are stored in a Cache to increase the graphics performance of the system. Occasionally, the cache may get corrupted, or a Setup change may invalidate the data in the cache. This button clears all of the stored cache data. If the cache is wiped, it will be re-built automatically each time a screen is loaded. During this re-build, system performance will slow down. It will return to the normal speed the next time that the page is loaded.

## Re-Start TCP

This does a power on reset of this Touch panel. It is safe to do, and sometimes is required after certain setup changes.

## Reset IOM



This button resets the IOM back to the factory settings. If you have decided that you don't like that way that you have your vehicle configured, use this option to start over.

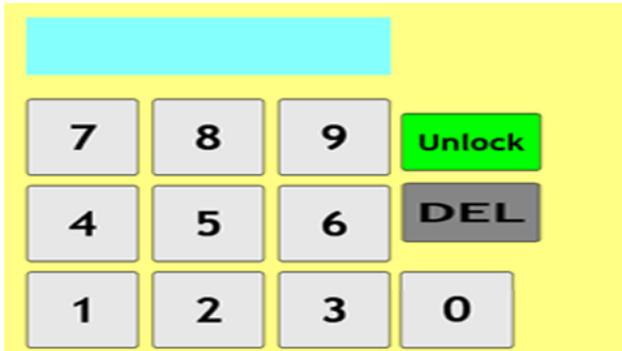
It is highly recommended that you backup your system configuration before using this option.

If your system is operating normally, do not use this option.

## Exit

This exits the setup screen, and returns the system to normal operation. If you are completely finished with the installation, you may want to use the 'Re-Start TCP' option, so that all setup codes are cleared, and so that you can verify the system functions as you expect.

## Four Inch (Driver) Screen Setup:



To enter Setup Mode, press and hold anywhere you see a clock on a screen. A keypad will appear on the screen to unlock Setup Mode.

Enter code '8191' and then press 'Unlock' to unlock the screen and enter setup mode.

## Driver's Smarttouch Setup Screen



**Set Clock** – Sets the time for the entire system.

**Setup Lighting** – Allows you to Show or Hide the Litesync Controls on the lighting page.

**Setup Partition** – Allows you to select which partition options you would like to control.

**Setup Entertainment** – Allows you to selected the remote control layout.

**Set Automode** – Allows you to Show or Hide the Auto Climate mode controls.

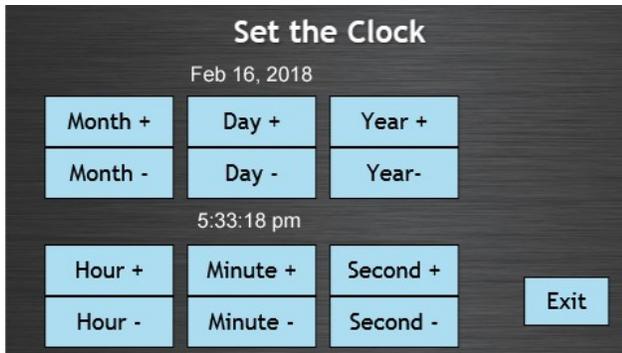
**Diagnose** – Displays and clears faulted channels.

**Erase Cache** – Clears the Graphics Cache to fix any image glitches when settings are changed.

**Show-Hide Options** – Allows you to Show or Hide Unused buttons.

**Exit** – Returns to the start screen.

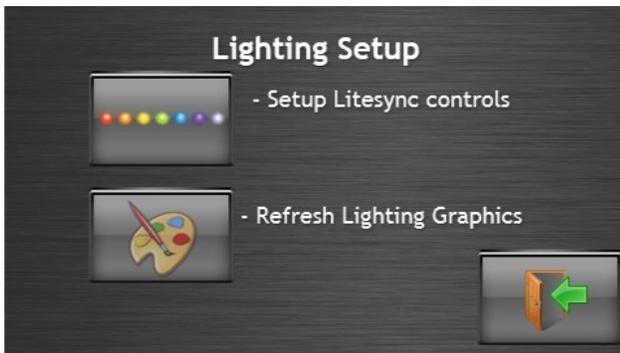
## Set Clock



Press the "+" or "-" button to adjust the time and date. The time is set from the Driver's display for the entire Smart touch system.

The clock can also be set during normal operation from the Driver's Option screen.

## Setup Lighting



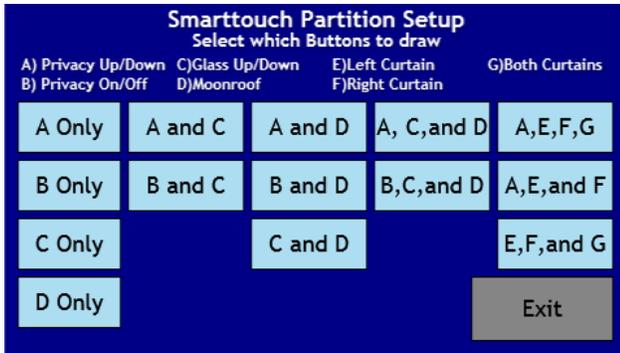
To Enable or Disable the buttons for a Litesync RGB module, select 'Setup Litesync Controls'.



**'Shows Litesync controls'** - This will add a button to the lighting screen that takes you to the Litesync control page.

**'Hides Litesync controls'** - If your vehicle does not have a Litesync module, select this to hide the control buttons. The button is hidden by default.

## Setup Partition



The Partition setup page is the same as on the Passenger Screen. Selecting a partition setup changes both the Partition Page and the control on the left side of the InMotion Screen.

See the Passenger Partition Setup section to see all of the various options for Partition buttons.

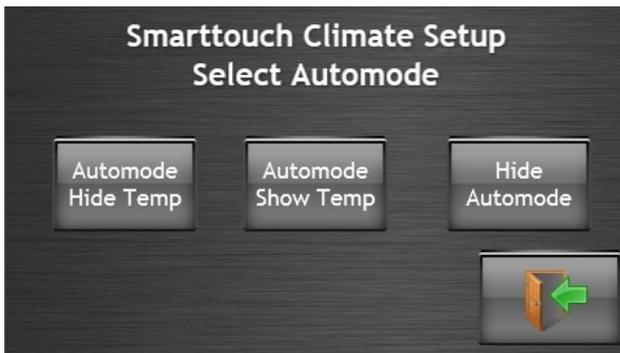
## Entertainment Setup



Select the layout that matches the one selected on the Passenger screen. The passenger screen controls the Universal Infrared Remote Control transmitter, if installed.

If your vehicle does not use the Universal Remote Control function to control a radio, and you would like to completely hide the entertainment options, use the 'Show-Hide Options' from the main setup page.

## Setup Automode



**'Hide Automode'** - If you are not using the Autoclimate mode, select this. The normal Climate buttons will be shown, and the Auto buttons will be hidden.

**'Automode, Show Temp'** - This will show the Auto mode buttons, and will also display the measured vehicle temperature.

**'Automode, Hide Temp'** - This will show the Auto mode buttons, and will not show the measured vehicle temperature.

# Diagnose

Channel One	Channel Six	Doors	A/C
Channel Two	Channel Seven	Privacy	Heat
Channel Three	Channel Eight	Moonroof	Channel Ten
Channel Four	Channel Nine	Glass	
Channel Five	Channel Eleven	HVAC	Exit

The IOM uses Smart FET technology instead of old fashion relay blocks and fuses. Every output channel is protected from Overloads and short circuits by the Smart FETs. Any channel that draws more than the allowed amount of current will automatically trip a fault for that channel. Any button that controls the faulted output will turn dark gray, and will be disabled until the fault is cleared. Clearing the fault is equivalent to replacing a blown fuse in a non-smart system. This means that no fuses are required, and they never have to be replaced.

**Clear Faults:**  
Press the Red box to clear the fault

Channel One	Output A	Red
	Output B	Green
	Output C	Green
	Output D	Green

Back

From the setup menu, you can clear system faults. Any channel that turns red has a fault. Pressing the faulted channel will show you which output is faulted. Examine everything attached to the associated output, clearing any short circuits or damaged components. When the fault has been removed, press the red box next to the faulted output to clear the fault and re-enable the channel.

Faults can also be viewed from the In-Motion Screen, but the driver does not have the ability to clear the fault without the Setup Code. Faults can only be cleared from the setup page.

## **Erase Cache**

Clear the graphics cache to fix any display issues after updates have been made.

After the cache has been erased, the system will need to re-build each screen. The screen re-build is noticeably slower than normal operation, but the next time that screen is shown, it will redraw very quickly.

## **Show-Hide Options**

If an option is not installed on your vehicle, you can hide the control button from the Driver Screen. Just like on the Passenger Screen Show-Hide Options page, you must set through each button and select 'Show' or 'Hide'. When all of the selections have been made, the system copies the selected files to show and hide the buttons. When a button is hidden, and associated control on the InMotion page is also hidden.

## Faults

What is a fault?

Smart touch is unique in that there are no fuses. It is protected by software so that when there is an over current situation the system throws a fault and shuts down the associated circuit. When a fault occurs, the system will display a red warning (output fault) on the driver display. The associated circuit control button will be blacked out and will not operate.

How to reset a fault.

Faults are reset from the display screens. Most of the system setup are done from the rear screen but faults can be reset from the front or rear screens. If using the rear display you must be on any screen except the startup screen. If resetting from the front display any screen with a time display will work. Enter setup mode by holding the time display for approximately 5 seconds. A keypad display will pop up. Type in the code 8191 then press unlock. The system will display a Smart Touch Setup Screen. Press the block labeled Diagnostics on the rear screen or Diagnose on the front screen. The system will display a screen with all output blocks. If a fault has been detected the associated block will be red. Make note of what this block is labeled so if it repeats you know what output is causing the problem. Press the red block and the system will display another screen. Press the red block again to clear the fault. The Red block should turn green. Press the back button to go to the previous menu then press exit to go to the setup menu.

If your system continues to throw a fault on the same output you need to investigate to see what is drawing too much current and correct it as continued resetting can damage the system.

## File Copying:

### Logo Screen Customization:

#### Custom logo procedure for Drivers display

1. Make sure you have a high quality image; it must be the correct size and format.
2. Use an image sizer to make sure that your finished image is 480 x 272 pixels in a GIF format and name it inf-spl
3. When you are done you should have an image file named inf-spl.gif and properties will have a size of 480 x272.
4. Create a folder on your USB stick drive named custom4.
5. Save or drag and drop your image to this folder.
6. With the drivers display powered up insert the USB stick into the port on the display.
7. When the keypad pops up enter 1300 and then press unlock.
8. Choose the button that says LOAD SETUP.
9. After the image loads remove the USB stick
10. Touch through to the main screen then press and hold the clock display until the keypad pops up (approximately 5 seconds)
11. Enter 8191 and press unlock.
12. Press the ERASE Cache button and then exit out of the setup screen.
13. As you touch through each screen it will reload the new image.

#### Custom logo procedure for passenger display

1. Make sure you have a high quality image; it must be the correct size and format.
2. Use an image sizer to make sure that your finished image is 800 x 480 pixels in a GIF format and name it STLOGO2
3. When you are done you should have an image file named STLOGO2.gif and properties will have a size of 800 x 480
4. Create a folder on your USB stick drive named custom7.
5. Save or drag and drop your image to this folder.
6. With the Passenger display powered up insert the USB stick into the port on the display.
7. When the keypad pops up enter 1300 and then press unlock.
8. Choose the button that says LOAD SETUP.
9. After the image loads remove the USB stick
10. Touch through to the main screen then press and hold the clock display until the keypad pops up (approximately 5 seconds)
11. Enter 8191 and press unlock.
12. Press the ERASE Cache button and then exit out of the setup screen.
13. As you touch through each screen it will reload the new image.

## **HVAC Relay board**

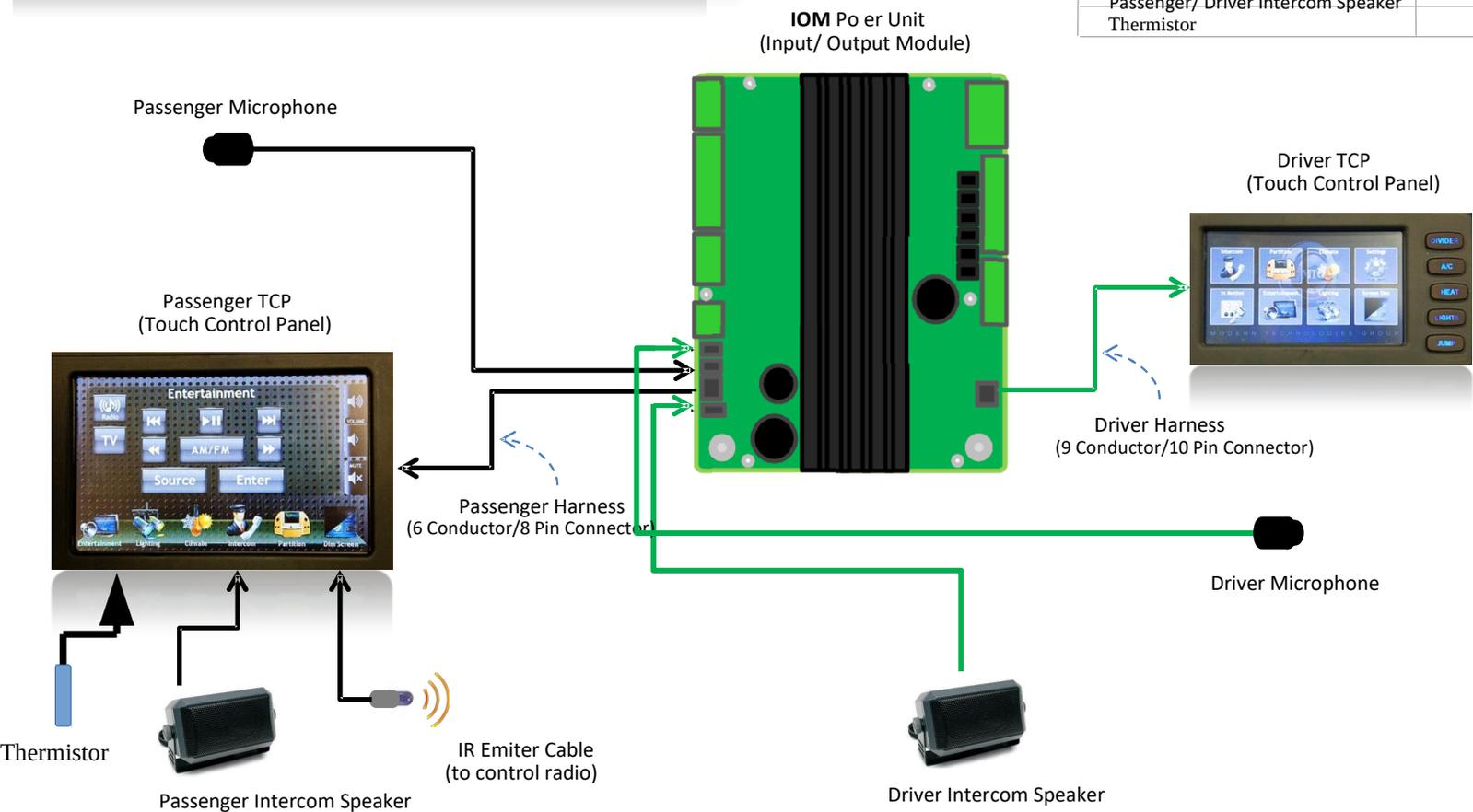
This option is for system builders that choose to not drive their HVAC blower motors directly from the IOM. The IOM provides high current, high Side Drivers, which means that output at the connector is 12V, and provides high current. Many HVAC systems provide their own driver boards that require 'Low Side' drive. The HVAC relay board takes the High Current, High Side drive outputs from the IOM and converts them to Low Current, Low Side drives that can control external driver boards.

# Hardware Setup

## SMART TOUCH V2 Cable Connections

- For use with BGM Engineering Standard Harness Kit:**
- Passenger Harness (6 Conductor/ 8 Pin Connector) - 30 f
  - Driver Harness (9 Conductor/ 10 Pin Connector) - 15 f

Smart Touch System includes:	
IOM Po er Unit	
Passenger TCP	
Driver TCP	
Passenger Harness (6 Conductor)	
Driver Harness (9 Conductor)	
Passenger Microphone Cable - 6 f	
Driver Microphone Cable - 10 f	
IR Emite r Cable	
Passenger/ Driver Intercom Speaker	
Thermistor	



# SMART TOUCH Connector Diagram

- Pin 1- Jump start output
- Pin 2- Not used
- Pin 3- Aux battery sense
- Pin 4- Factory battery sense input
- Pin 5- Not used

Note: J-12, Pin 1-9 are lighting outputs.

- Pin 1- Output 1 (15 amp)
- Pin 2- Output 2 (15 amp)
- Pin 3- Output 3 (15 amp)
- Pin 4- Output 4 (15 amp)
- Pin 5- Output 5 (15 amp)
- Pin 6- Output 6 (15 amp)
- Pin 7- Output 7 (15 amp)
- Pin 8- Output 8 (15 amp)
- Pin 9- Output 9 (15 amp)
- Pin 10- freon (A/C mode only)
- Pin 11- Heater valve

This plug is reserved for future development.

- Pin 1- (+) Parking light input
- Pin 2- (-) Door trigger input
- Pin 3- (+) Door trigger input
- Pin 4- Ignition input

Driver's microphone input

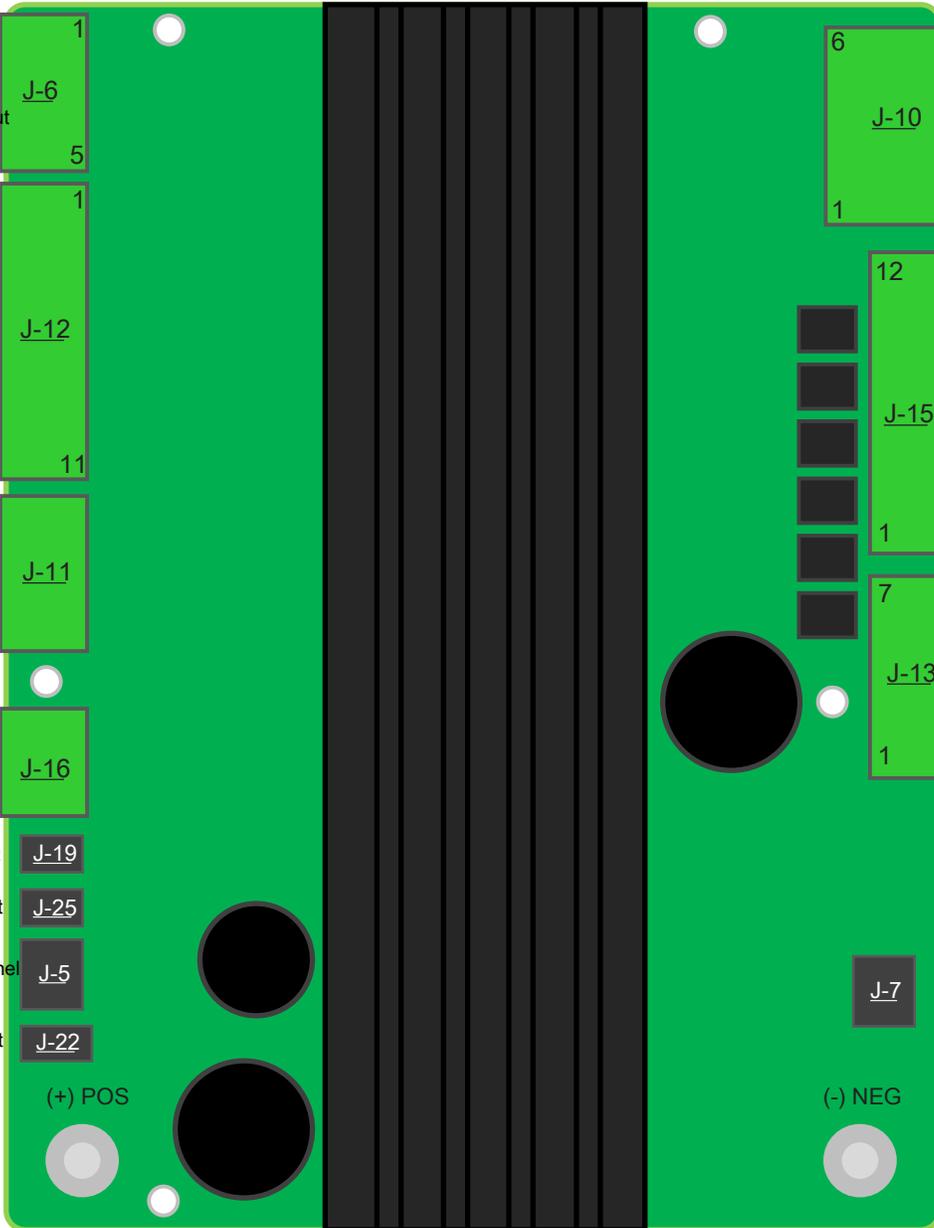
Passenger microphone input

(TCP) Passenger touch control panel

Driver's speaker input

IOM Main power input

(+) POS



- Pin 6- Condenser fan (2) (30 amp)
- Pin 5- Condenser fan (1) (30 amp)
- Pin 4- HVAC Blower motor (4) (30 amp)
- Pin 3- HVAC Blower motor (3) (30 amp)
- Pin 2- HVAC Blower motor (2) (30 amp)
- Pin 1- HVAC Blower motor (1) (30 amp)

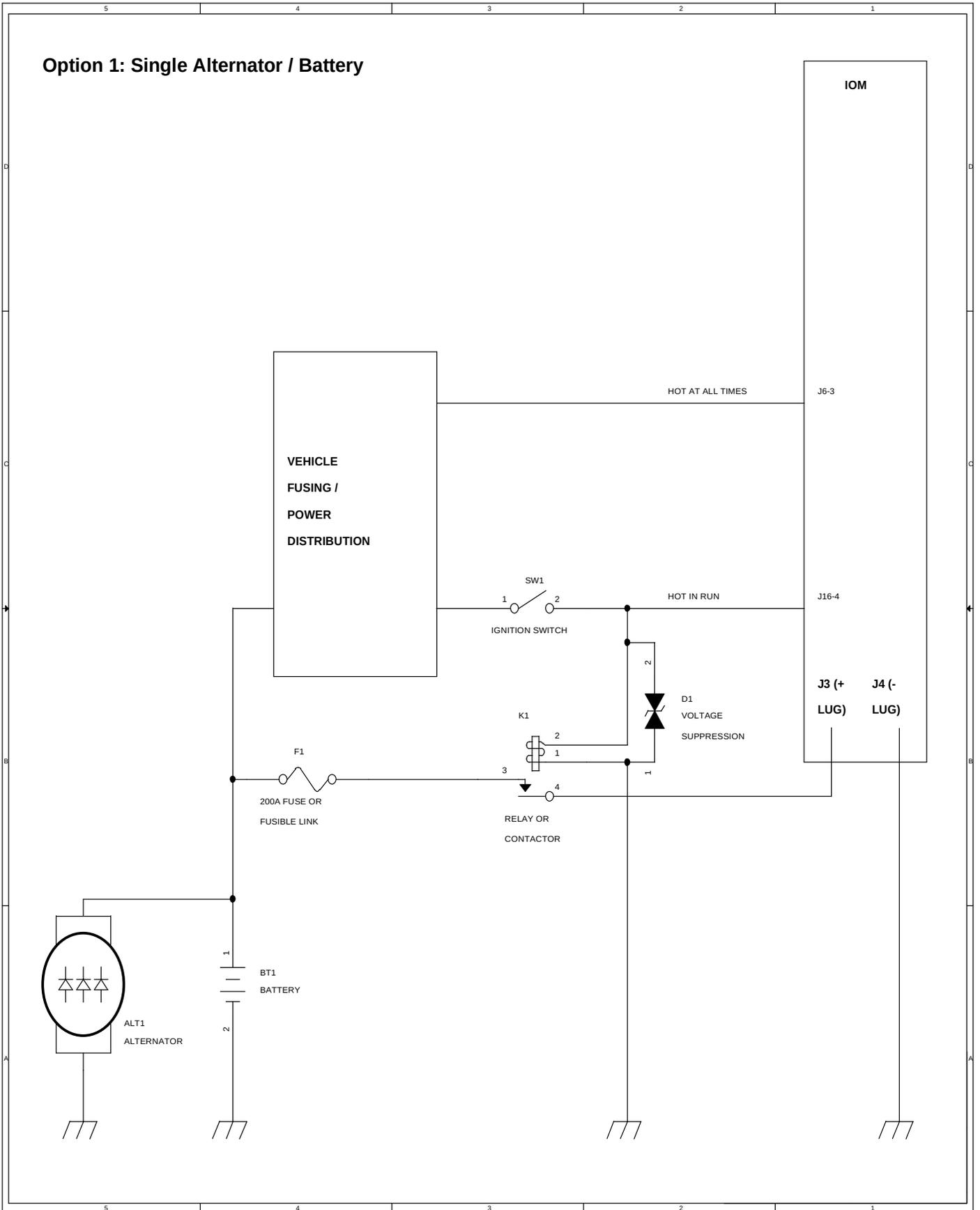
- Pin 12- Radio constant power
- Pin 11- Not used
- Pin 10- Radio mute output
- Pin 9- Coach light output
- Pin 8- Not used
- Pin 7- Not used
- Pin 6- Partition (1)
- Pin 5- Partition (2)
- Pin 4- Moon roof (1)
- Pin 3- Moon roof (2)
- Pin 2- Glass (1)
- Pin 1- Glass (2)

- Pin 7- Not used
- Pin 6- Output 13 (Radio) + Power
- Pin 5- Output 13 (Radio) - Ground
- Pin 4- Output 12 (TV) + Power
- Pin 3- Output 12 (TV) - Ground
- Pin 2- Output 11 (15 amp)
- Pin 1- 12 volt output when system is turned on (15 amp).

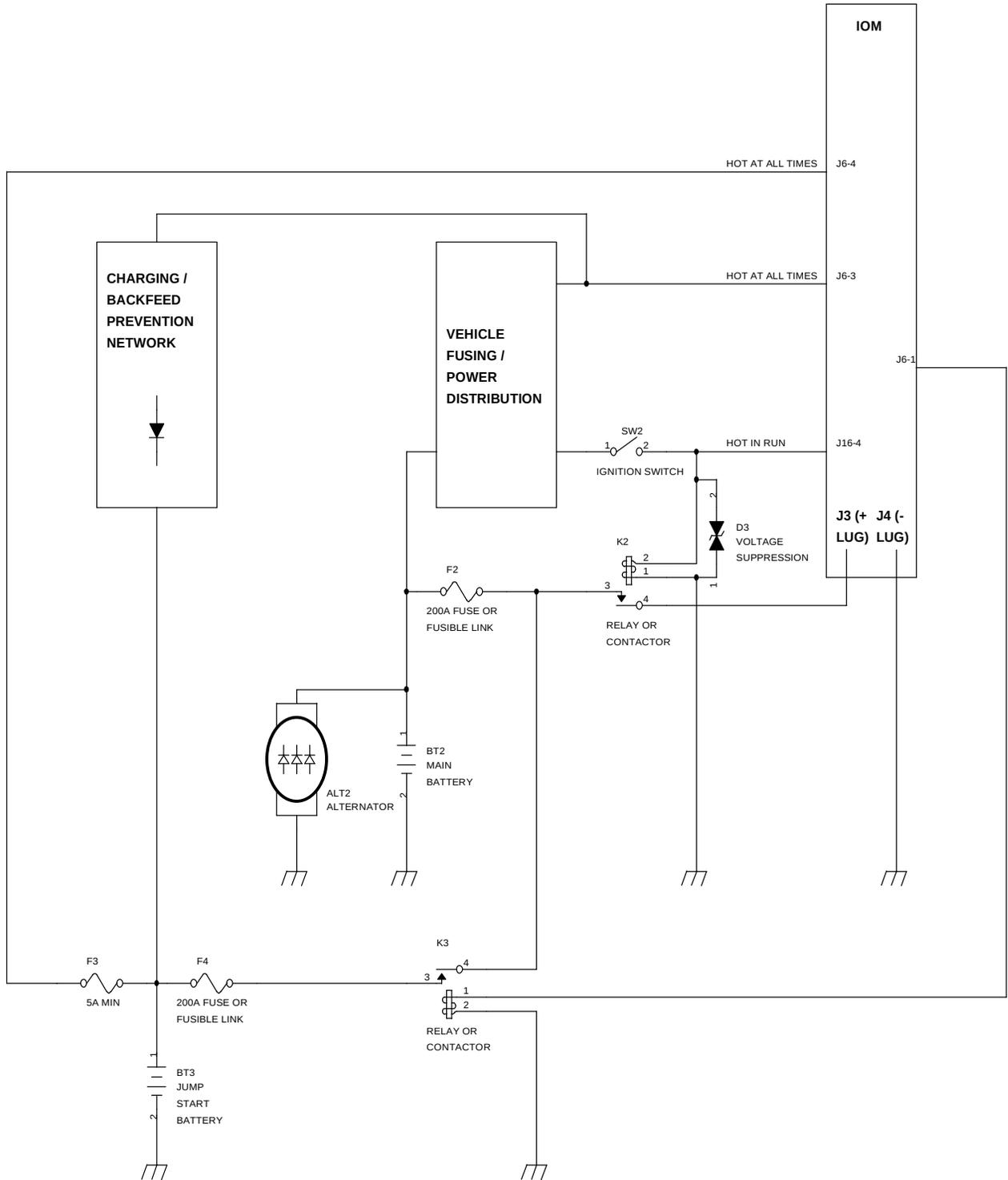
(TCP) Driver touch control panel

IOM Main ground input

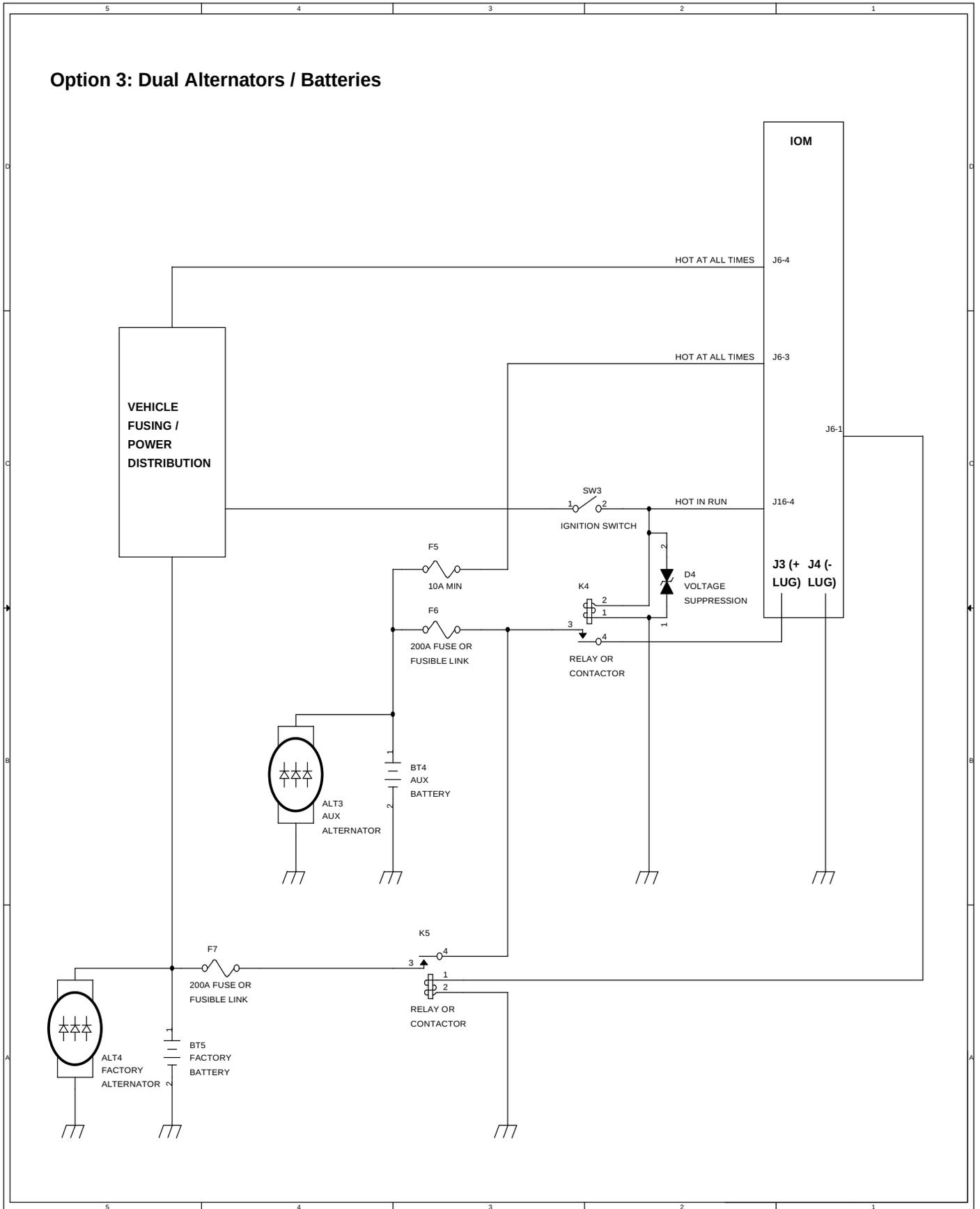
# Option 1: Single Alternator / Battery



## Option 2: Single Alternator, Main Battery, Jump Start Battery



### Option 3: Dual Alternators / Batteries



## Troubleshooting:

### Touchscreen:

If the touchscreen is out of calibration, when you touch the screen the wrong button might be activated. If this happens, you can re-calibrate the touchscreen.

### Touch Calibration Procedure

Note: You will need a USB flash drive/memory stick to download the software.

#### Step 1: Download Calibration File

1. Click the SCREEN CALIBRATION DOWNLOAD link on our website page for the SMT004531 MTGI Touch System.
2. Your computer/device will download a file called touch.zip.
3. Click on the downloaded zip file and a window will open called file manager.
4. Drag and drop the file shown in the window to your desktop. The file is named touch.txt.
5. Connect your USB flash drive/memory stick to your computer/device and open the USB flash drive/memory stick folder then drag and drop the desktop file touch.txt into it. (If your computer does not automatically prompt you to open this folder it can be found on most computers by going to your start menu, devices and printers and locating the USB storage device).

#### Step 2: Calibrate Screen

1. With the system powered off insert your USB flash drive/memory stick into your screen display.
2. Turn system on. **(IMPORTANT NOTE: After system is turned on, if you do not start the calibration procedure within 30 seconds you will exit this mode and have to repeat step 5 from download procedure and re-download the touch.txt file to your USB flash drive/memory stick).**
3. Display should come on with a message at the top of display. **(IMPORTANT NOTE: Screen calibration is not being performed).** You may not be able to see the entire message.
4. Touch any where on the screen and a small arrow will pop up in the upper right hand corner.
5. Touch the area indicated by the red arrow 3 times.
6. The arrow will move to the upper left corner, touch 3 times.
7. The arrow will move to the bottom middle, touch 3 times.
8. Touch anywhere on the screen and the unlock screen will display.
9. Remove USB flash drive/memory stick, calibration update is complete.

## Driver & Passenger Software Update Instructions

Note: You will need a USB flash drive/memory stick to download the software.

### Step 1: Download Software Files

1. Click the DOWNLOAD SOFTWARE UPDATE link on our website page for the SMT004531 Smart Touch System.
2. Your computer/device will download a file called SoftwareUpdates.zip.
3. Click on the downloaded zip file and a window will open called file manager.
4. Drag and drop the folder shown in the window to your desktop. The folder is named SoftwareUpdates.
5. Connect your USB flash drive/memory stick to your computer/device and open the USB device folder. (If your computer does not automatically prompt you to open this folder it can be found on most computers by going to your start menu, devices and printers and locating the USB storage device).
6. Open the desktop folder SoftwareUpdates. Select all files within the folder and transfer them to your USB flash drive/memory stick by dragging and dropping them into your device file folder. (Important Note: You must open SoftwareUpdates folder and select and transfer all the files inside the folder. Do not transfer the entire folder or the system will not be able to find the update files).
7. Using your computer, safely eject your USB flash drive/memory stick.
8. The software files will include updates for all of the following steps below. We recommend updating all units in one sitting.

### Step 2: Update Passenger Touch Screen

1. Insert your USB flash drive/ memory stick into the passenger display with the system powered on.
2. System should display an unlock screen.
3. Enter code 8670 and press unlock.
4. System should automatically download firmware files and display unlock screen when completed.
5. Remove the USB and re-insert into display.
6. System should display an unlock screen.
7. Enter code 8670 and press unlock.
8. System should automatically download graphic files and display unlock screen when completed.
9. Remove USB, updates complete.

### Step 3: Update Driver Touch Screen

1. Insert your USB flash drive/ memory stick into the passenger display with the system powered on.
2. System should display an unlock screen.
3. Enter code 8670 and press unlock.
4. System should automatically download firmware files and display unlock screen when completed.
5. Remove the USB and re-insert into display.
6. System should display an unlock screen.
7. Enter code 8670 and press unlock.
8. System should automatically download graphic files and display unlock screen when completed.
9. Remove USB, updates complete.

## **IOM System Backup**

Backing Up IOM setup information to a USB Drive.

Up to four different backups can be saved to one USB drive.

Use codes '1200', '1201', '1202', and '1203' to store various configurations.

Insert USB drive into either the Driver's or Passenger's TCP. Enter one of '1200' codes.

Select 'Save Setup'. All of your configuration changes made to the IOM will be saved to the USB drive.

If you setup is every changed incorrectly, or you need to send your IOM in for service, you will now have a backup of your setup.

When you want to load a saved setup, enter the same code that you used when you saved it, and then select 'Load Setup'.

## **TouchPanel Backup**

Backing Up Touchscreen Setup information to a USB Drive.

Insert USB drive into either the Driver's or Passenger's Touchpanel.

Enter code '1300', '1301', '1302', or '1303'

Select 'Save Setup' to save your screen setup.

To reload your setup, enter the same code that you used to save, but select the 'Load Setup' button.

# NOTES

# NOTES



## Smart Touch Version 2.0 Operator's Manual

# Smarttouch Version 2.0

## Table of Contents

What's New in Version 2.....	3
Automatic Temperature Control.....	3
Universal Remote Control.....	3
External Switches.....	3
System Components.....	4
Driver's Screen (4.3 Inch).....	4
Passenger's Screen (7 Inch).....	4
IOM (Input/Output Module).....	4
Driver's Screen Operation.....	5
Start Screen.....	5
Home Screen.....	5
Entertainment Screen.....	5
Lighting Screen.....	6
Climate Screen.....	6
Divider Screen.....	6
Intercom Screen.....	7
In-Motion Screen.....	7
Options Screen.....	7
Rear Screen Power.....	7
About.....	7
Select Theme.....	8
Enter Messages.....	10
Intro Line.....	11
Driver's Name.....	11
Message Line One.....	12
Message Line Two.....	12
Set the Clock.....	13
Override Buttons.....	14
Seven Inch Screen Operation.....	15
Entertainment Page.....	16
Lighting Page.....	17
Lightshow Controls.....	17
Climate Page.....	18
Intercom Page.....	19
Partition Page.....	20

## **What's New in Version 2**

### **Automatic Temperature Control**

- An external temperature sensor has been added to the seven inch display. This allows for Automatic climate temperature control. See the "Climate Setup" instructions to activate this function.

### **Universal Remote Control**

- A Infrared Receiver (IR) has been added to the seven inch display. This allows the seven inch screen to work as a Universal Remote Control that controls any stereo or TV that comes with an infrared remote. See the "Entertainment Setup" instructions to activate this function.

### **External Switches**

- Control any channel with external switches (sold separately), as well as from the touchscreens.

#### **And more...**

- Updated Graphics
- Improved Performance
- Upgraded system setup options.
- Ability to show or hide any unused button category's.
- Increased Current capacity on the Lighting channels.
- HVAC relay board (sold separately)
- Upgraded 'Jumpstart' Logic to prevent false triggers.
- Re-designed gaskets on touchscreens.

## System Components

### Driver's Screen (4.3 Inch)



The Driver's screen provides full control over the Smarttouch system.

From the Driver's screen, you can select Themes, and also enter personalized messages to be displayed on the Passenger screen.

The Driver's Screen also provides options to lock out options or turn off the rear screen.

The five buttons on the right hand side of the screen are 'Override' buttons that allow you to control the system even if the touchscreen becomes damaged.

Depending on the options installed in your vehicle, certain screens and buttons may be hidden.

### Passenger's Screen (7 Inch)



The passenger screen provide control of the Smarttouch system from the rear of the vehicle.

Multiple Passenger Screens can be installed in the same vehicle for additional control points.

### IOM (Input/Output Module)

The IOM is the main power distribution and control point for the Smarttouch system. It is not accessed during normal operation.



# Driver's Screen Operation

## Start Screen



When the system is powered on, the start screen will be displayed. Touching anywhere on the screen will take you to the Home Screen.

If you would like to turn the entire system off, press and hold the Master On button for five seconds. Press and hold again to turn the system back on.

The background image of this screen may be modified to a custom logo. Contact Infinite Innovations for assistance on customizing this screen.

If the voltage on either the Main or Auxiliary battery is too low or too high, an indicator will appear on this page. The system will turn off all of the attached loads when the battery voltage is not in the proper operating range.

## Home Screen

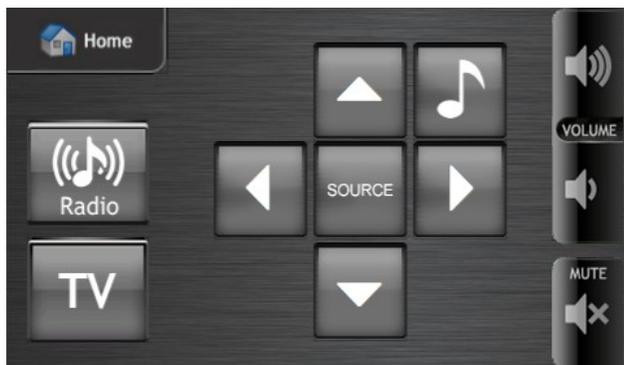


The top row of icons take you to the corresponding control page for the button type. These (and the intercom) are the same as the controls on the Passenger screen.

The icons on the bottom have the Driver specific screens 'InMotion' and 'Driver Options'.

The 'Dim Screen' button controls the screen brightness level.

## Entertainment Screen



The Entertainment page controls the Power for your TV and Radio, and also acts as a universal remote control.

The contents of the entertainment page will vary depending on the radio setup and the number of remote control buttons that have been programmed.

If your vehicle is not equipped with a Universal Remote Control, this screen will only show TV and Radio Power buttons, or may be hidden entirely.

## Lighting Screen



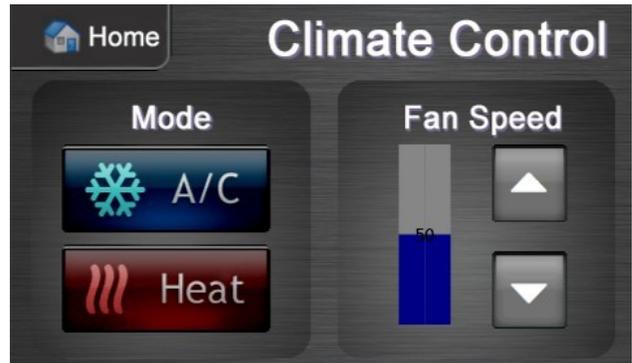
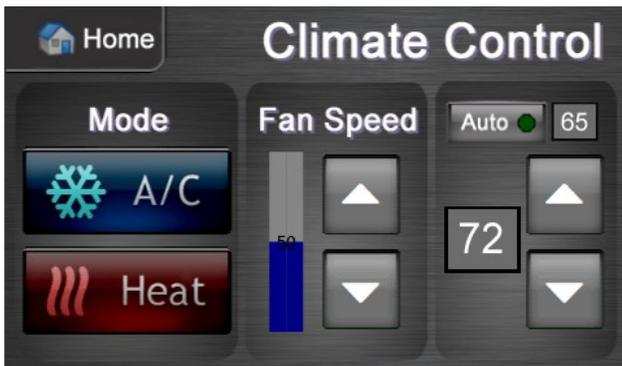
To control a light, the channel must first be selected. When a channel is selected, the background turns blue, and the Channel name appears in the lower control box. In this example, Channel One is selected. If a channel is On, a Green Indicator will appear. In this example, Channel Five is On and all the others are off.

If the channel is off when it is selected, it will turn on. If the channel is already on, the first touch will select the channel, and touching it again will turn it off. The selected channel can also be controlled by the lower control box, which allows each channel to be set to dimmed levels.

If a channel is not configured for dimming, the lower control box will not show the up/down arrows.

The lighting channel names will show the names configured for your vehicle by the installer. See the Installer's Manual for instructions if you would like to change the Lighting Channel names to better match your vehicle.

## Climate Screen



If your vehicle is not configured for Auto Climate control, the Auto buttons will not be displayed.

## Divider Screen



Depending on how your vehicle has been configured, the options on this page may vary. See the Divider Screen section for the passenger screen to see the various options.

The driver has the ability to 'Lock Out' the passenger from being able to control the partitions. Pressing the Lock Icon will lock or unlock the channel. When it is

locked, the icon will turn red. The driver still has full control of the channels, even when the passenger is locked out.

## Intercom Screen



The intercom can be turned on and off from this screen. The Driver's Volume and the Passenger's Volume can be adjusted independently. Passengers also have the ability to adjust the Passenger Volume from the rear screen. If your vehicle is not equipped with an intercom, this page will be hidden.

## In-Motion Screen



The In-Motion screen allows you to quickly control most of the features directly from one screen. Use the 'Home' button to see all of the control options. Depending on which options are installed in the vehicle, some of the controls may be hidden.

## Options Screen



From the Driver's Options screen, you can select a Theme to be displayed on the Passenger's screen. You can also enter a four line message that is displayed on the Passenger screen. To turn the System On or Off, press and hold the Master button.

### Rear Screen Power

This allows the driver to temporarily disable the rear controls. The graphic will indicate whether the rear screen is on or off. If the screen is off and the

ignition is cycled, the rear screen will default to back to on.

## About

This page will show information about system version.

## Select Theme

You can select various themes depending on the type of event that your passengers are going to. The theme shown on the background of the Passenger screen is selected from the "Settings" page on the Driver's screen.

- 1) From the Home Screen, select the "Options" Icon.
- 2) On the "Options" page, select "Select Theme"
- 3) Choose a theme. The background of the page will preview the selected theme.

To see just the background image with the theme buttons hidden, use the button with the Magnifying glass. Press the back button to return to the selection screen.



Step 1



Step 2



Step 3



Preview

The passenger screen will immediately change to the selected theme.

The first time that a theme is used in the vehicle, or if the vehicle configuration has been modified, the passenger screen may draw the screen very slowly. The next time that the screen is drawn, it will be much quicker.

### Brushed Metal Theme (Default)



### Night on the Town Theme



### Sports Theme



### Wedding Theme



**Wood Panel Theme**



**Carbon Fiber Theme**



**Airport Theme**



**Foreign Travel Theme**



**Blue Swirl Theme**



**Mesh Theme**



## Enter Messages

The driver can enter a four line message that will be displayed on the passenger screen. Each line can be selected from a generic list of greetings, or customized. The message is cleared every time the ignition is turned off.



Figure 1: Example of a message on the Passenger Screen.

- 1) From the Home Screen, select the "Options" Icon.
- 2) On the "Options" page, select 'Enter Message'
- 3) Select the line of the message you would like to change.



Step 1

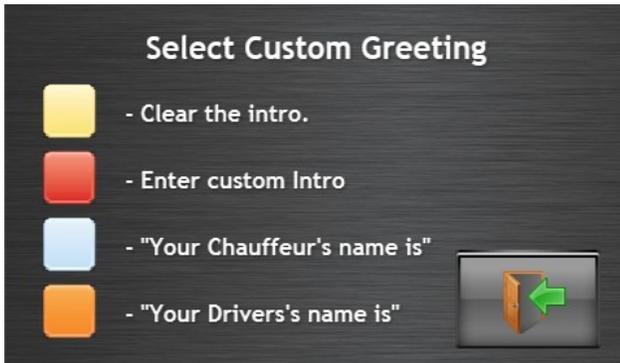


Step 2



Step 3

## Intro Line

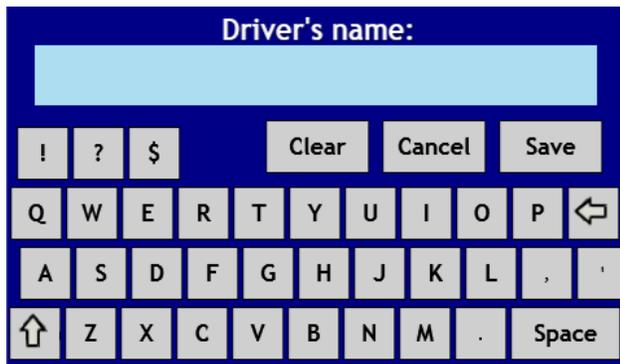


**Clear the Intro** – Erases the first line. The other 3 lines remain unchanged.

**Enter custom Intro** – Type in a custom first line.

**"Your Chauffeur's name is"** or  
**"Your Driver's name is"** - Use the second line to enter the Driver's name.

## Driver's Name

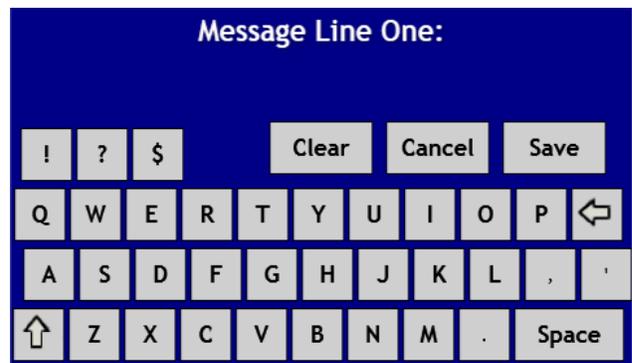
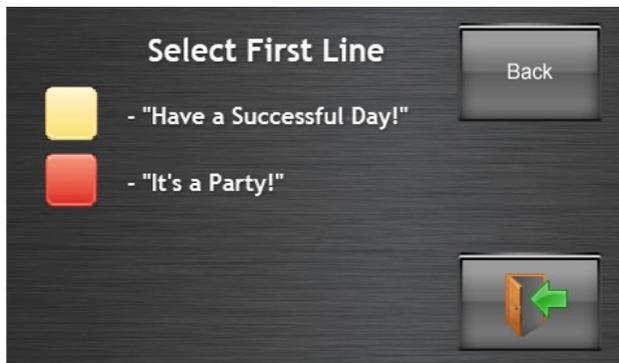
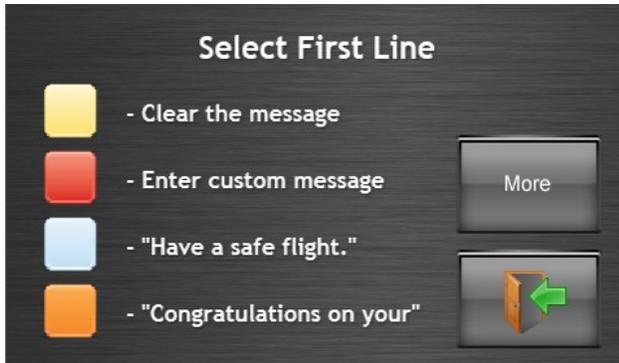


Use the Keypad to enter the Driver's name. The Up arrow switches the keypad between lowercase to uppercase.

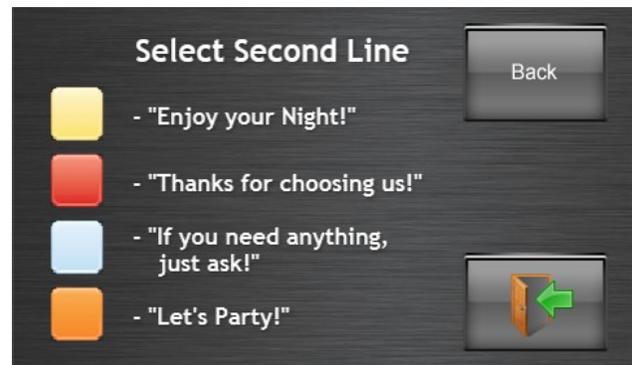
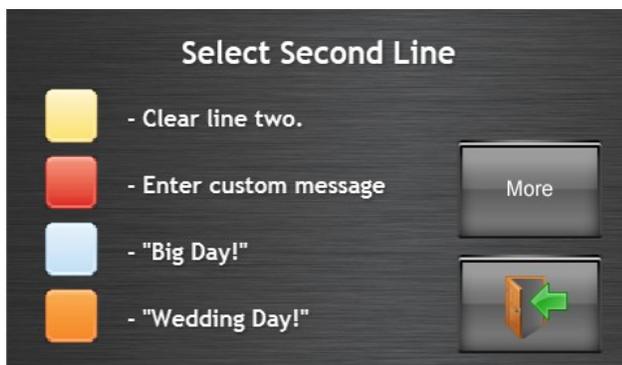
If you entered a Custom Intro for Line 1, this line does not have to be the drivers name. You can enter any text that you like.

## Message Line One

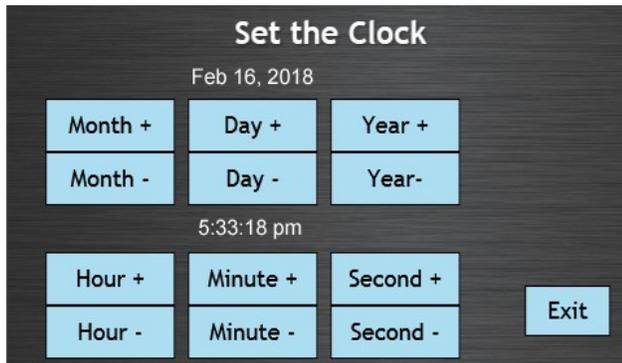
You can either select from a variety of pre-programmed messages, or enter a custom line.



## Message Line Two



## Set the Clock



Press the "+" or "-" button to adjust the time and date. The time is set from the Driver's display and is shown on all of the Smarttouch displays in the vehicle.

## Override Buttons

The driver's control has five override buttons located next to the touch screen. These buttons can be used if the driver's screen becomes inoperable and you could not turn on the electrical system through the touch screen.



**Divider** – When pressed, the divider will go down. When you let go and then press it again, the divider will go up.



**A/C** – When you press this button it will activate the A/C and turn on the blower motors to low speed. Pressing the button again will increase the fan speed in steps up to the maximum, and then back to off.



**Heat** – When you press this button it will activate the Heat and turn on the blower motors to low speed. Pressing the button again will increase the fan speed in steps up to the maximum, and then back to off.



**Lights** – When you press this button, it will turn on all of the lighting controlled by the Smarttouch system to full brightness. Pressing a second time will turn all of the lights off.



**Jump** – When you press this button it will activate the Jumpstart Solenoid to connect the Main battery to the Auxiliary battery, allowing you to start the vehicle if the Main battery has gone dead. Activating jumpstart will turn off all of the system outputs for several minutes to allow the battery to recharge before being used. This feature will only function if one battery is low, and the other battery is charged. To Activate Jumpstart, press and hold the button. After 5 seconds, the Master

button will turn red and say Master Off and the Jumpstart Solenoid will be engaged. While still holding the Jumpstart button, press the ignition to start the vehicle. If you release the button, you will have to hold it for five seconds before it re-engages again.

## Seven Inch Screen Operation



## Entertainment Page

If your vehicle is configured to use an Entertainment page, it will be the first page displayed after the start screen. Depending on the vehicle configuration, the appearance of the Entertainment page will vary.



The 'Power' buttons will turn the TV or Radio On or Off. If the power is on, the power button will be blue. If the power is off, the power button will be gray. The other buttons operate the Universal Remote Control function.

## Lighting Page



In order to control a lighting channel, the channel must first be selected. The selected lighting channel will have a blue background, and the control box at the bottom will show the selected channel name.

If the channel is off at the time it is selected, it will turn on. If it is already on, it will stay on. Touching the blue button again will turn it off. When a channel is on and selected, the brightness can be adjusted using the up and down buttons. Some lights may be configured for multiple brightness settings, and some may only go from on to off.

If your vehicle is equipped with a Litesync RGB module, there will be an addition button that says 'Lightshow'.

## Lightshow Controls



The Litesync module can be turned On or off from this screen. To change the pattern of the selected light show, use the Light Show Up and Down buttons. To increase or decrease the brightness of the RGB lights, use the Dimmer Up and Down buttons.

If your vehicle is equipped with multiple Litesync modules, they can be set to the same pattern by turning on the 'Sync Lightshow' button. If your vehicle only has one Litesync module, this button will be hidden.

## Climate Page



**A/C** – Turns the Air conditioning On or Off. When the A/C is on, the button will be highlighted.

**Heat** – Turns the Heat On or Off. When the Heat is on, the button will be highlighted.

Turning either the A/C or Heat on will turn the other one off.

**Fan Speed** – Fan speed can be manually adjusted.

**Auto Mode** – The desired temperature can be set, and the system will automatically control the fan, A/C, and Heat.

## Intercom Page



If your vehicle is equipped with an intercom, you can use this to contact the driver.

# Partition Page

Depending on the vehicle configuration, the appearance of the Partition page will vary. If you would like to customize this page, contact Infinite Innovations.



Figure 3: Layout A: Privacy Up/Down Only



Figure 2: Layout B: Privacy On/Off Only



Figure 4: Layout C: Glass Only



Figure 5: Layout D: Moonroof Only



Figure 7: Layout A and C: Privacy Up/Down and Glass Up/Down



Figure 6: Layout B and C: Privacy On/Off and Glass Up/Down



Figure 9: Layout A and D: Privacy Up/Down and Moonroof Open/Close



Figure 8: Layout B and D: Privacy On/Off and Moonroof Open/Close



Figure 11: Layout C and D: Glass Up/Down and Moonroof Open/Close



Figure 10: Layout A, C, and D: Privacy Up/Down, Glass Up/Down, and Moonroof Open/Close



Figure 12: Layout B,C,and D: Privacy On/Off, Glass Up/Down, Moonroof Open/Close



Figure 13: Layout A, E, and F: Privacy Up/Down, Left & Right Curtains Up/Down



Figure 14: Layout E,F, and G: Left Curtain, Right Curtain, Both Curtains Up/Down



Figure 15: Layout A,E,F,G: Privacy Up/Down, Left,Right,and Both Curtains Up/Down