Firefly Integrations

General System Overview



Imagination · Innovation · Integration

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This document is a general overview of a typical G12 multiplex system from Firefly Integrations. The information in this document is subject to change at any time without notice.

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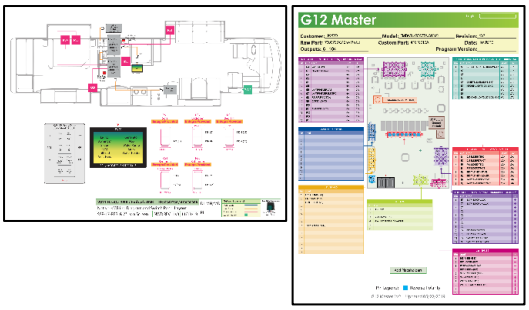
28 SSP17 Switch Panels

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G12 Panel Introduction

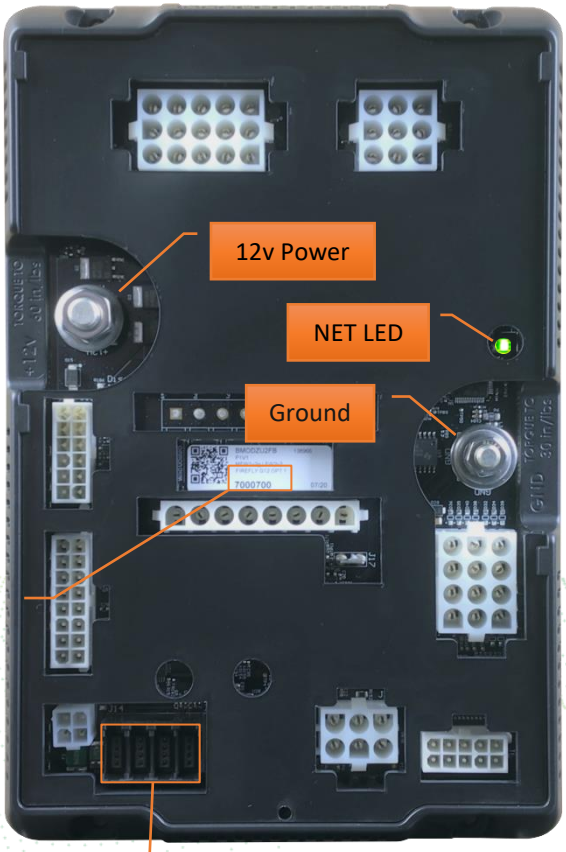
Email Support@Fireflyint.com for Network Wiring Diagrams and Pinout Schematics.
Please include in the email:

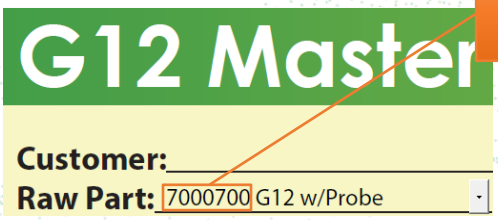
-Year
-Make
-Model
-GUI and LC Versions (from the Settings screen)



The G12 power distribution panel receives the signals sent from the Touchscreen/Switch Panels/App and performs the actions that have been requested by activating and deactivating the required 12V circuits.

Note – The G12 comes in several hardware configurations, known as Options. The ID Sticker will identify exactly which Option was installed in the coach (Example – Option 1). Before troubleshooting, please identify your specific G12 part number and compare it to the G12 pinout diagram to ensure accuracy.





RVC Net Ports – these ports provide direct access to the RVC Network for wired Switch Panels, Touchscreens, Mini Plug Terminators (120-ohm resistors) and Vegatouch Modules.



RVC Network Pinout

Red – 12V positive

White – CAN High

Blue/Green – CAN Low

Black - Ground

Once a light or function has been toggled ON (from the Screen, Touch Panel or App), the pin output for that particular circuit will activate and the G12 will send 12V to the designated device. In this example, the Bed Overhead Lights have been toggled ON, so the G12 panel is sending 12V+ to pin 9 (Connector J3, Output 89).

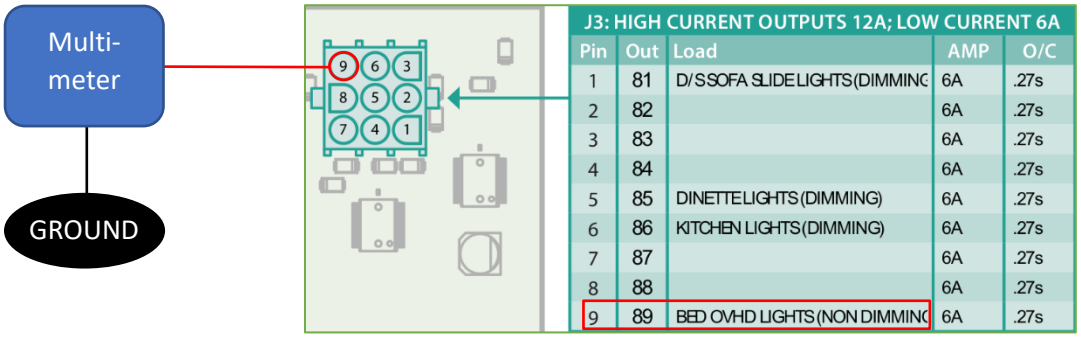
Verify Positive output voltage by testing the pin with a Multi-meter as illustrated below. Test Negative output voltage (on circuits that produce -12V) by applying Positive and Ground where necessary.

If output voltage has been confirmed and the Overhead Lights do not come on:

-Check the wiring to the lights.

If no output voltage is measured:

-Check the Network Diagnostics Screen to ensure that the Green LED is showing status.
-Verify that your Multimeter is functioning properly.
-Replace the G12 if necessary.



J3: HIGH CURRENT OUTPUTS 12A; LOW CURRENT 6A

Pin	Out	Load	AMP	O/C
1	81	D/S SOFA SLIDE LIGHTS (DIMMING	6A	.27s
2	82		6A	.27s
3	83		6A	.27s
4	84		6A	.27s
5	85	DINETTE LIGHTS (DIMMING)	6A	.27s
6	86	KITCHEN LIGHTS (DIMMING)	6A	.27s
7	87		6A	.27s
8	88		6A	.27s
9	89	BED OVHD LIGHTS (NON DIMMING	6A	.27s

Inputs

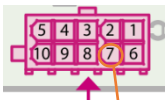
Some Outputs (Example – Water Pump) may be dependent upon the G12 receiving an Input signal before operating. If an Output in question fails to operate, measure the wiring running to the associated Input.

If Input voltage from the incoming wiring has been confirmed:

-Verify the connection to the Molex connector.
-Check the Network Diagnostics Screen to ensure that the Green Input LED is showing status.
-The G12 Input circuit is possibly defective.

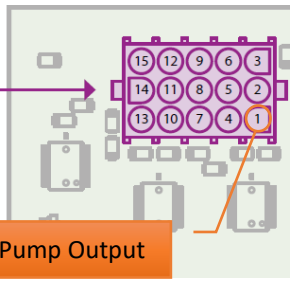
If Input voltage from the incoming wiring is not present:

-The G12 Output cannot operate until it has received the required Input voltage.



J4: HIGH CURRENT OUTPUTS 12A; LOW CURRENT 6A

Pin	Out	Load	AMP	O/C
1	90	WATER PUMP	10A	1.1s
2	91	FRONT FURNACE	6A	.27s
3	92		6A	.27s
4	93		6A	.27s
5	94		6A	.27s
6	95		6A	.27s
7	96	WATER HEATER GAS	6A	
8	97	WATER HEATER ELECTRIC	6A	



J5: INPUTS

Pin	Load	+/–
	Water Pump Input	–
3		–
4		–
5		–
6	IGNITION (12V)	+
7	WATER PUMP (12V)	+
8		+
9	DSI FAULT (12V)	+
10		+

Temperature Inputs

Temperatures (by zone) are reported to the G12 by thermistors located throughout the coach.

If a temperature is displaying dashes on the screen instead of a valid temperature reading:

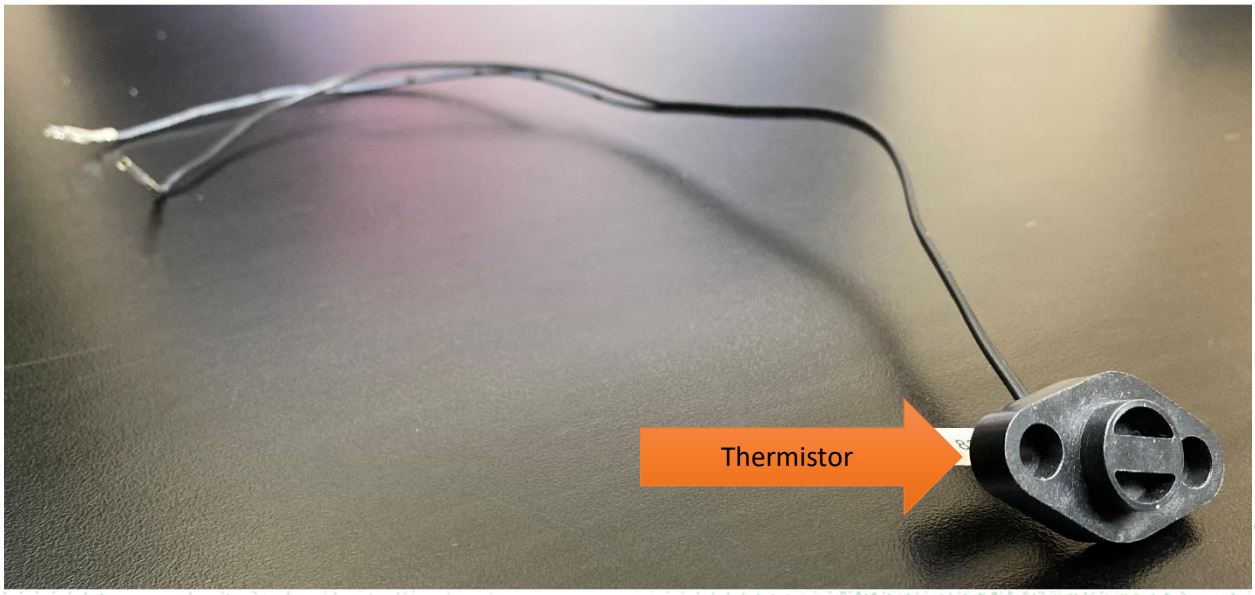
-Verify that the thermistor has been plugged into the correct pins on connector J12.

-Plug a known working thermistor into the pins in question to verify if it works.

-If it works, replace the failed thermistor.

-If it does not work, replace the G12.

J12: THERMISTORS	
Pin	Load
1	FRONT THERMISTOR
2	REAR THERMISTOR
3	
4	
5	
6	
7	FRONT THERMISTOR (GND)
8	REAR THERMISTOR (GND)
9	
10	
11	
12	

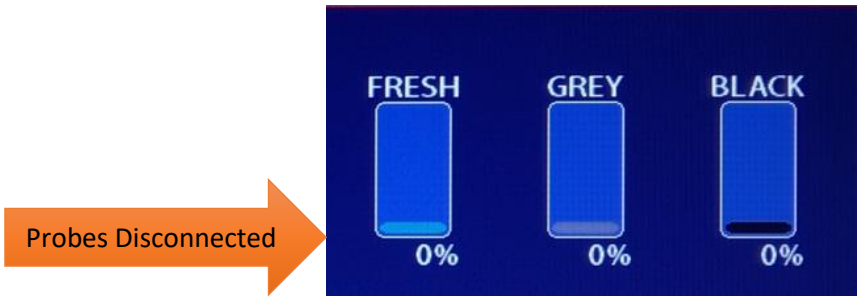


Fluid Tank Readings - Probes

If a system uses Probes to report tank capacities, the values will display in thirds on the touchscreen.

-Tank value is reporting 0%:

-The probe is disconnected. Test with a known working probe and replace if necessary.



LP Tank

If a tank is overfilled (above 80%), the percentage will change to “Disc” and the graphic will show empty. This message could also be caused by a disconnected LP input.

A filled value of between 75% - 80% will show “Full” for the percentage and the graphic will show full.

A filled value of between 25% - 75% will display the accurate percentage and graphic level.

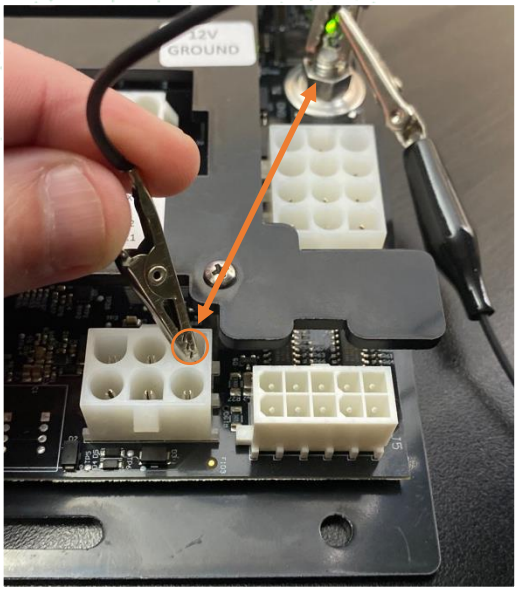
A filled value up to 25% will result in the percentage displaying “Low” and the graphic showing the accurate level.

If the tank is not overfilled and but value is displaying “Disc”:

-The LP is most likely disconnected. Use an alligator clip to run 12V Ground to the LP Input and watch the screen for an updated value. If any value other than “Disc” displays, then the G12 is working normally.

-If the LP value does not change, replace the G12.







J13: LPG	
Pin	Load
1	LPG TANK SENSOR(GROUND)
2	
3	CHASSIS VOLTAGE(12V)
4	LPG TANK SENSOR(GND)
5	
6	GEN RUN

Testing Network Resistance

Before attempting to diagnose a G12 issue, please perform a Network Resistance Test to ensure that the system doesn't have a resistance issue. A fully functioning RVC network will have a solid green NET LED and (2) 120-ohm terminator resistors actively working in the system.

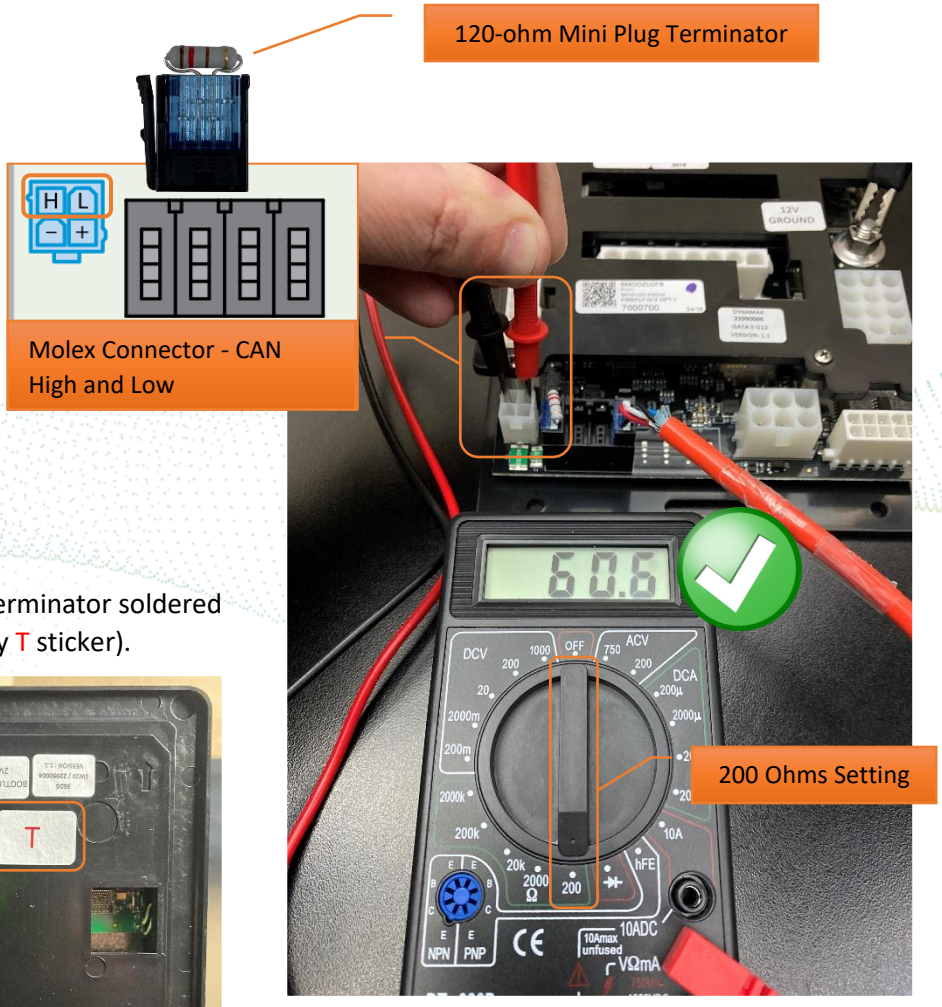
In the example below, the Network Resistance Test is being performed at the Molex Connector at the lower left corner of the G12 (not available on all models). Resistance can also be measured using the middle 2 pins of any Net Port (CAN H and L).

NOTE - All power to the system must be disconnected before measuring resistance.

If the system has no active terminators:
-A reading will be unavailable. Check the wiring for a dead short.

If a system has 1 active terminator:
-The resistance test will read roughly 120 ohms. Check network wiring for loose connections.

If a system has 2 active terminators:
-The resistance test will read roughly 60 ohms.



Note: Many systems will have a terminator soldered into the touchscreen (indicated by T sticker).



Use the NET LED Status Key to determine the operational status of the RV-C Network.

Network Status Indicator

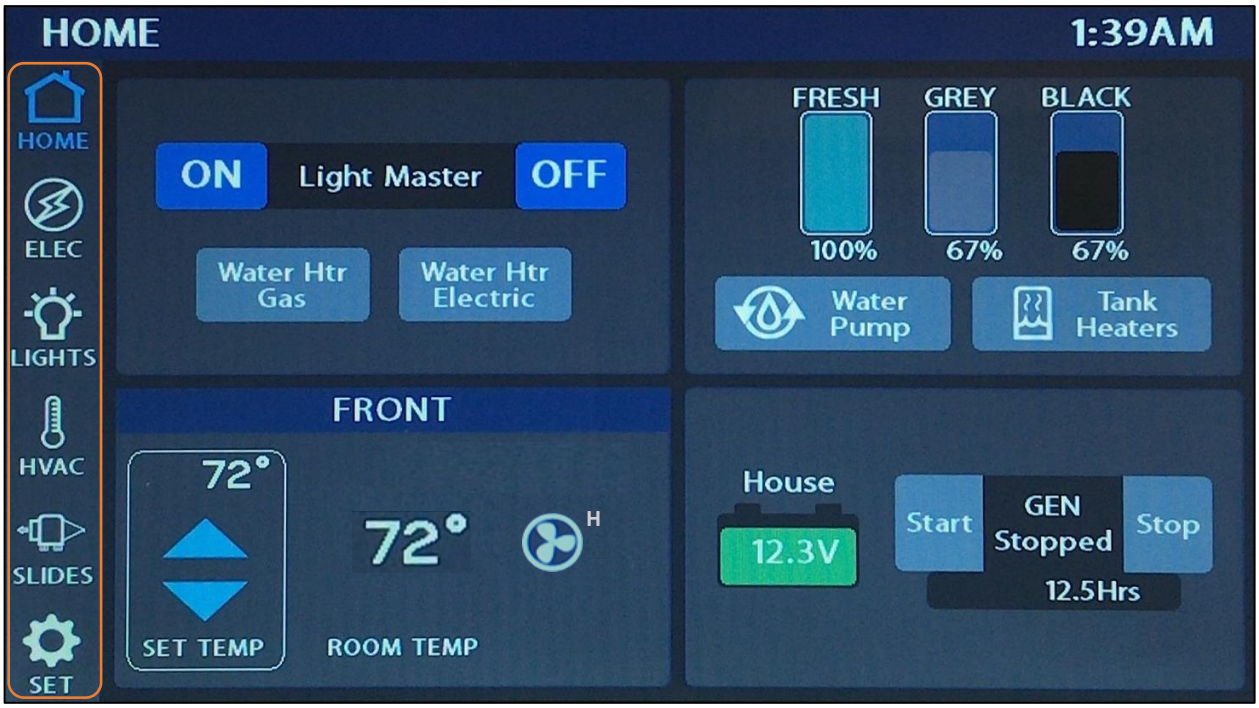
- Fast flashing Green Light (4 times/sec) – Device is attempting to make initial connection.
- Slow flashing Green Light (1 time/sec) – Device was online but has been offline for at least 5 sec.
- Solid Green – Device is connected to network and is communicating properly.
- Solid Red – Device has gone offline and is not connected to a network.
- Alternating Red & Orange – Device has gone offline and is trying to re-connect (within 30 sec).
- Alternating Green & Orange – Device is currently online but has gone offline 2 or more times.

Please follow these general tips before calling Technical Support:

- Power cycle the coach before troubleshooting. As with all electronics, many times restarting a product is all that is required to fix an issue.
- Ensure that the G12 has a solid green NET LED. If it doesn't, measure for a Network Resistance of roughly 60 ohms with all power to the coach turned off. If roughly 120 ohms has been measured, the system is missing a terminator resistor.
- If an Output isn't working (example – a ceiling light won't come on) test the Output Voltage from the pin in question on the G12 panel to ensure that the G12 panel is sending 12V to the light. If the light icon has been tapped on, the Network Diagnostics page should also show status. If you successfully measure 12V on the pin in question, double check the wiring from the connector to the lights, as well as the light bulb itself.
- If a Zone Temperature is displaying dashes instead of a numerical value, verify a solid connection between the thermistor and the Molex connector. If possible, test with a known working thermistor to see if the problem persists.
- If a Fluid Tank is reading 0%, it is currently disconnected. Investigate the wiring and test with a working known probe if necessary.
- If an LP Tank is overfilled (above 80%), the percentage will change to "Disc" and the graphic will show empty. This message could also be caused by a disconnected LP input. Investigate the wiring connection between the LP gauge and the G12 input.
- Please note the GUI and LC Versions (from the settings page) before calling Technical Support.

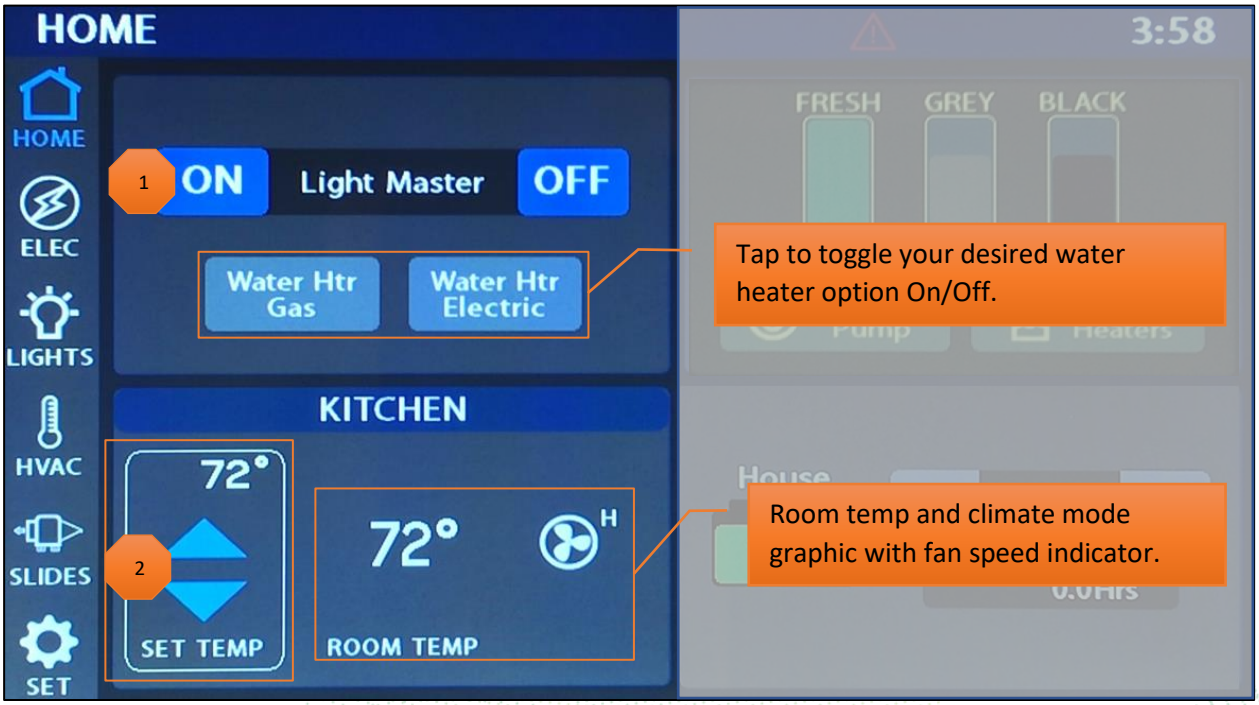
Touchscreen Navigation

Tap any icon from the navigation bar to select the desired page. The currently selected page will always be listed in the top corner of the screen.



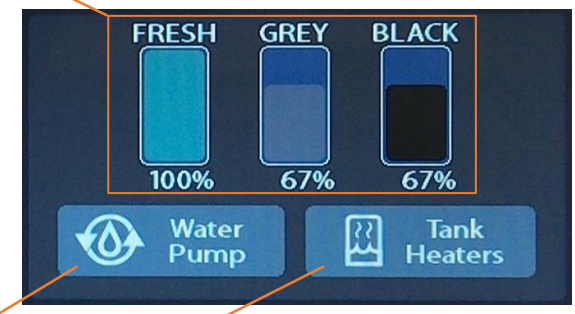
Home

1 The Light Master controls all interior lights at once. When Light Master Off is pressed, it will remember which lights were on. Then, when Light Master On is pressed, it will only turn on the lights that are in memory. To turn on all lights again, press and hold Light Master On for at least one second.
*Troubleshooting – Memory is rewritten each time Light Master Off is pressed. In the case that it is pressed twice in a row, it will remember that no lights were on and just touching Light Master On won't turn on any lights. Press and hold Light Master On to turn the lights back on.



2 Climate Control – Tap the arrows to select your desired set temp.

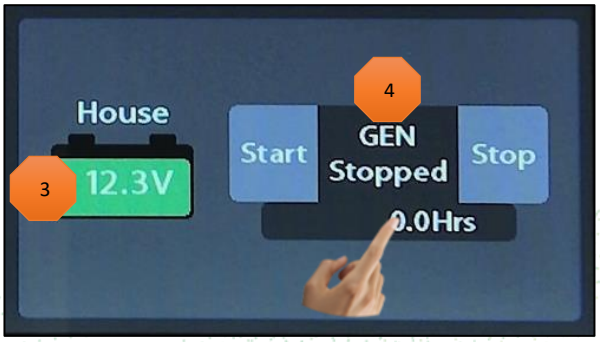
Individual tank graphics represent the percentage filled for holding tanks.



Water Pump – Tap to toggle On/Off.

Tank Heaters – Tap to toggle On/Off.

3 Battery Level Indicator - This graphic will indicate the house battery voltage. It will display Green while above 12V and Red while below 12V.

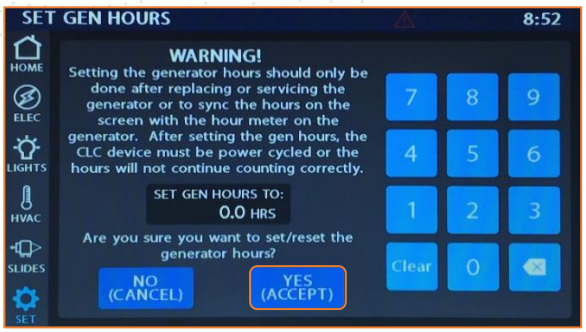


4 **Generator Controls**

Gen Start – Press and Hold Start for at least 1 second to start the generator.

Gen Stop – Tap Stop to stop the generator.

The Generator display will show the total number of generator hours accumulated as well as the current operating status (running or stopped). Generator hours are saved to the system, not to the generator itself. Press and Hold the generator display hours for 3 seconds to access the Set Gen Hours screen. Use the keypad to enter your desired gen hours then press Yes to save and exit.



Electrical

This screen will summarize the complete electrical system (DC, AC, and Generator).

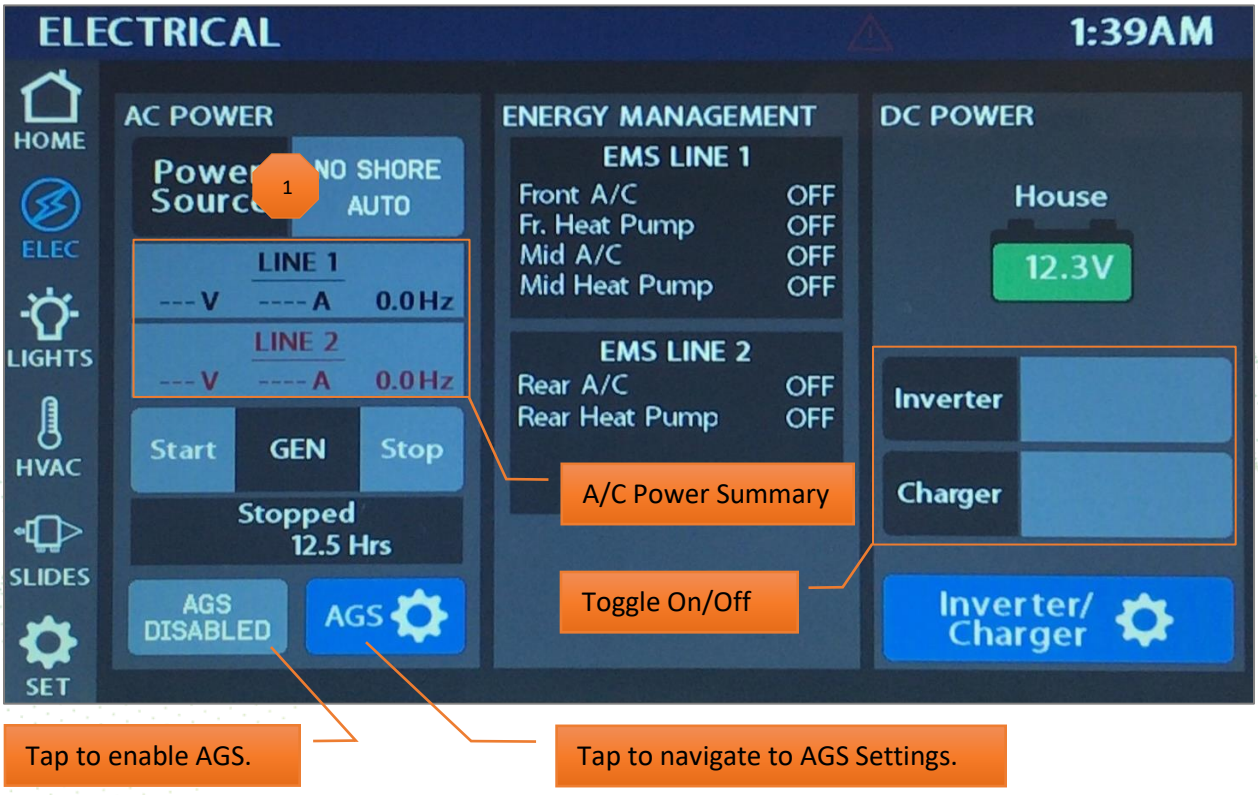
This system uses an AC Power Monitor Module to monitor Voltage and Amperage for the purposes of EMS (Energy Management System). EMS will ensure that power is available before allowing certain systems to run. If power is not available, it will not allow particular systems to run (shed the load).

Note – EMS HAS BEEN DISABLED ON 50-amp Shore and Generator power, so loads will not shed while the system is under these two conditions (barring the initial load shed when the generator is first starting up or when the generator is transitioning).

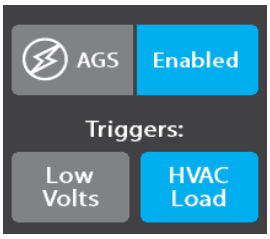
EMS will shed in the following order:

-Center A/C
-Front A/C
-Rear A/C

1 Power Source Select – 50-amp shore power will display automatically if connected to a 50-amp line. Tap to select 30, 20 or 15-amp if your coach is connected to a 30-amp line.

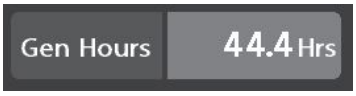


Electrical/Auto Gen Start (AGS)

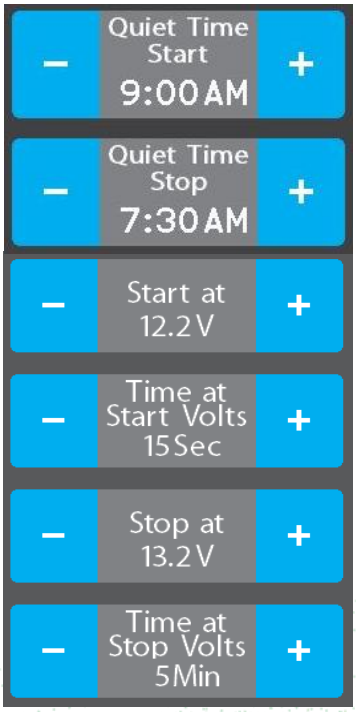


Tap to Enable/Disable AGS. A Warning screen will require action to enable.

Trigger Options – Automatically start the generator using specified voltage settings (Low Volts) or when A/C or Heat Pump start (HVAC). Select one or both triggers. If no triggers are selected, AGS will not run.



Gen Hours Display - The number of hours that the generator system has been used. These hours are saved to the system, not the generator itself. Press and hold to enter the Set Gen Hours screen.



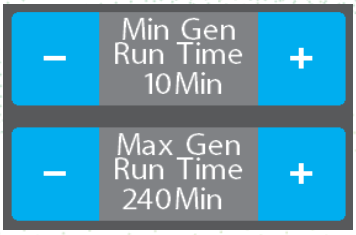
Quiet Time Start and Stop – Tap the +/- buttons to select the hours that your generator will not run.

Start at Volts - The generator will start when the voltage drops to this set point depending on "Time at Volts" setting below. (Range 10.5v – 12.5v)

Time at Start Volts - The generator will start when the voltage drops to the "Start at Voltage" for this specific amount of time. (Range 5 seconds – 1 min)

Stop at Volts - The generator will shut off when the voltage reaches this set point depending on "Time at Stop Volts" setting below. (Range 13.2v – 14.5v)

Time at Stop Volts - The amount of time required for the voltage to remain at "Stop at Volts" level before the generator shuts off. (Range 5min – 120 min)



Minimum Gen Run Time - Use the + and – keys to set the minimum amount of time that your generator will run once it has started. (Range 10min – 30min)

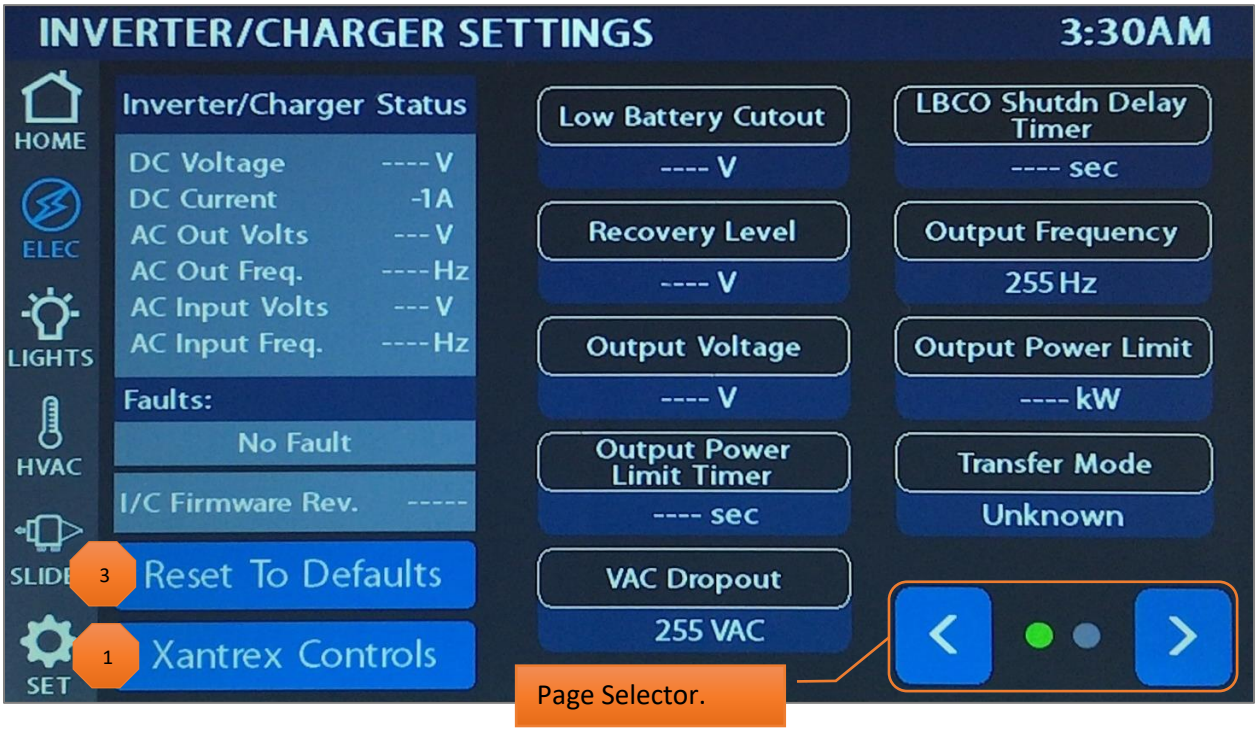
Maximum Gen Run Time - Use the + and – keys to set the maximum amount of time that your generator will run once it has started.
(Range 120min – 240min)



Gen Start Retries – select the number of times that the generator will retry to start if it fails to start on the first attempt.

Electrical/Inverter/Charger Settings

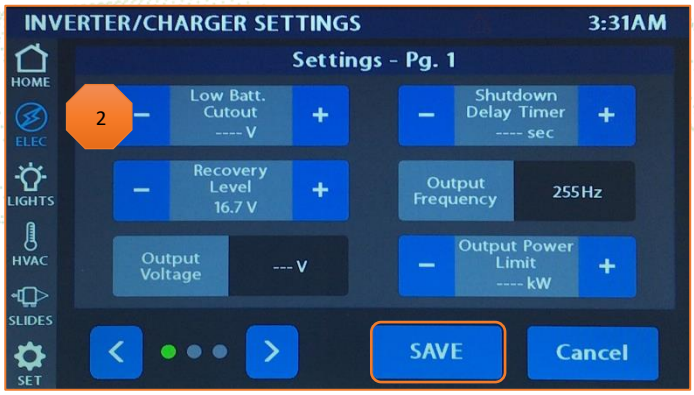
This screen will display the status of the charging system (currently disconnected). Tap the arrows at the bottom of the screen to select your desired page.



1. Xantrex Controls – Tap to navigate to the Controls screen.

2. Tap the +/- buttons to enter your desired Inverter/Charger settings. Tap Save once your desired settings have been selected.

3. Reset to Defaults – Tap to reset all charging settings back to factory settings.



Lights

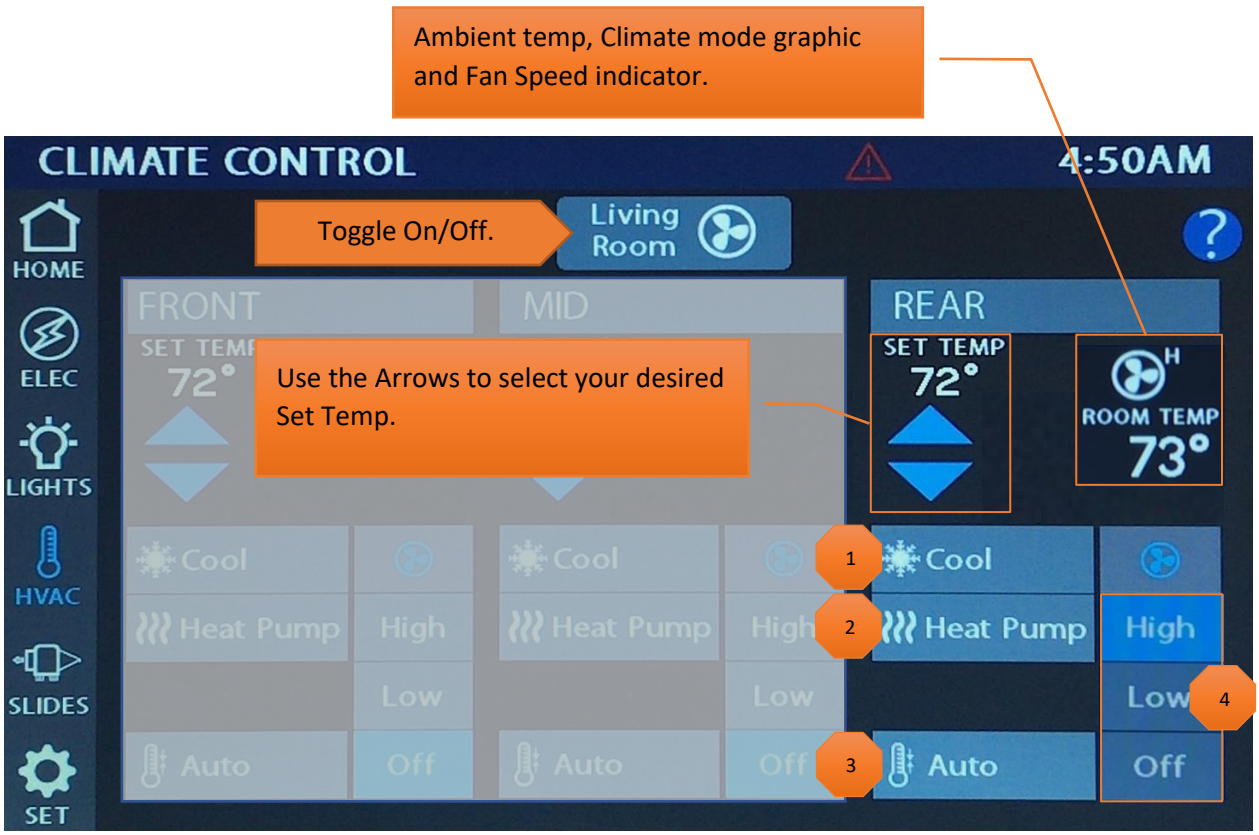
This screen will control the lighting for the entire coach, including the exterior. Tap any button to turn the desired light On/Off.



Lights with up/down arrows are dimmable. Press and hold these buttons to ramp the brightness up or down. Tap the buttons to toggle On/Off.



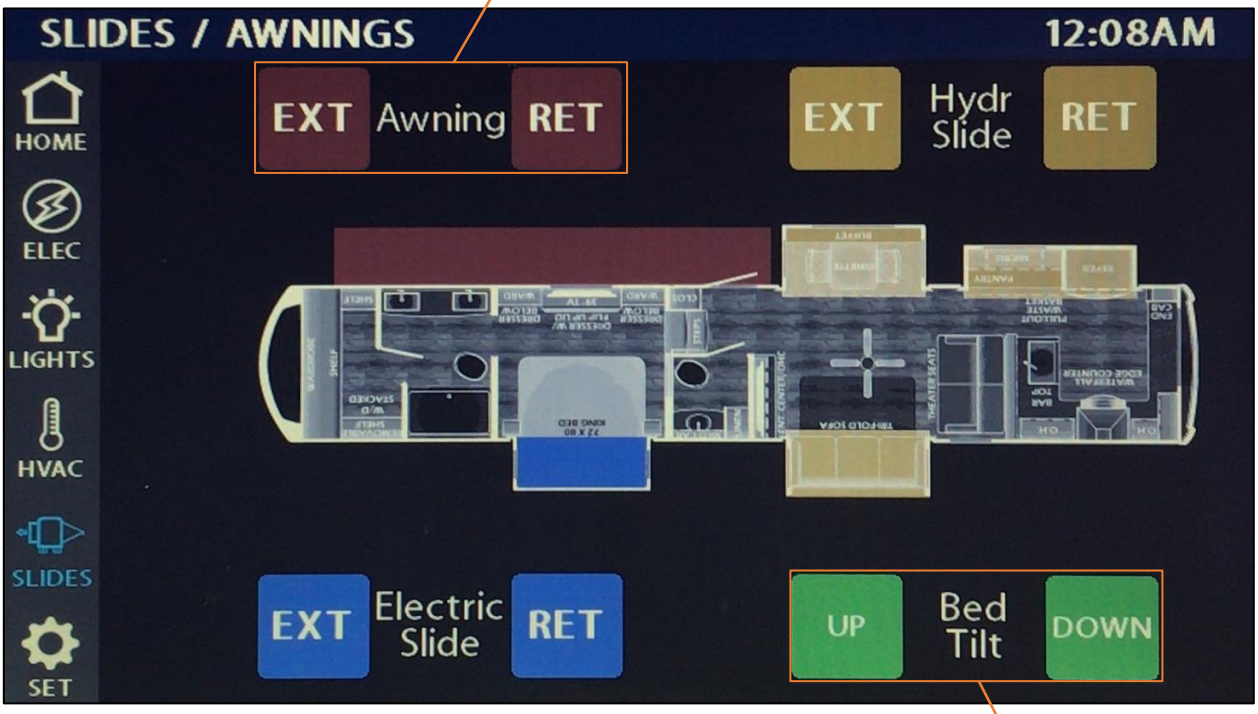
Climate Control (HVAC)



1. Cool – Tap to operate the air conditioning. The A/C will run until the current temp reaches your desired temp and then shut off.
2. Heat Pump – Tap to operate the Heat Pump. The Heat Pump will run until the current temp reaches your desired temp and then shut off.
3. Auto – Tap to put the system into Auto mode. The A/C or Heat Pump will automatically run to keep your desired temperature consistent.
4. Fan Mode – Fan Mode is only available if HVAC is off. The fan will operate by choosing High or Low.

Slides/Awnings

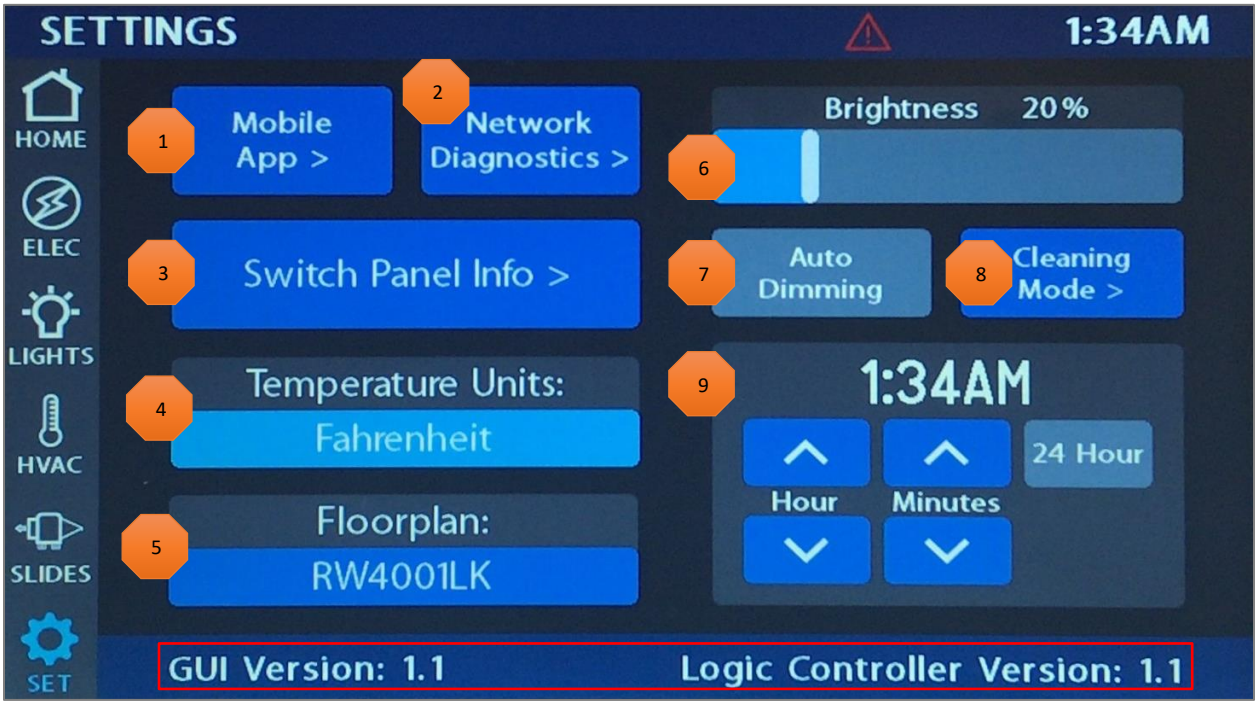
Press and Hold the EXT or RET buttons to extend or retract slides or awnings.



Press and Hold Up/Down to operate the Bed Tilt.

Note: The Extend buttons will be turned off and locked while the truck plug is engaged (if equipped).

Settings

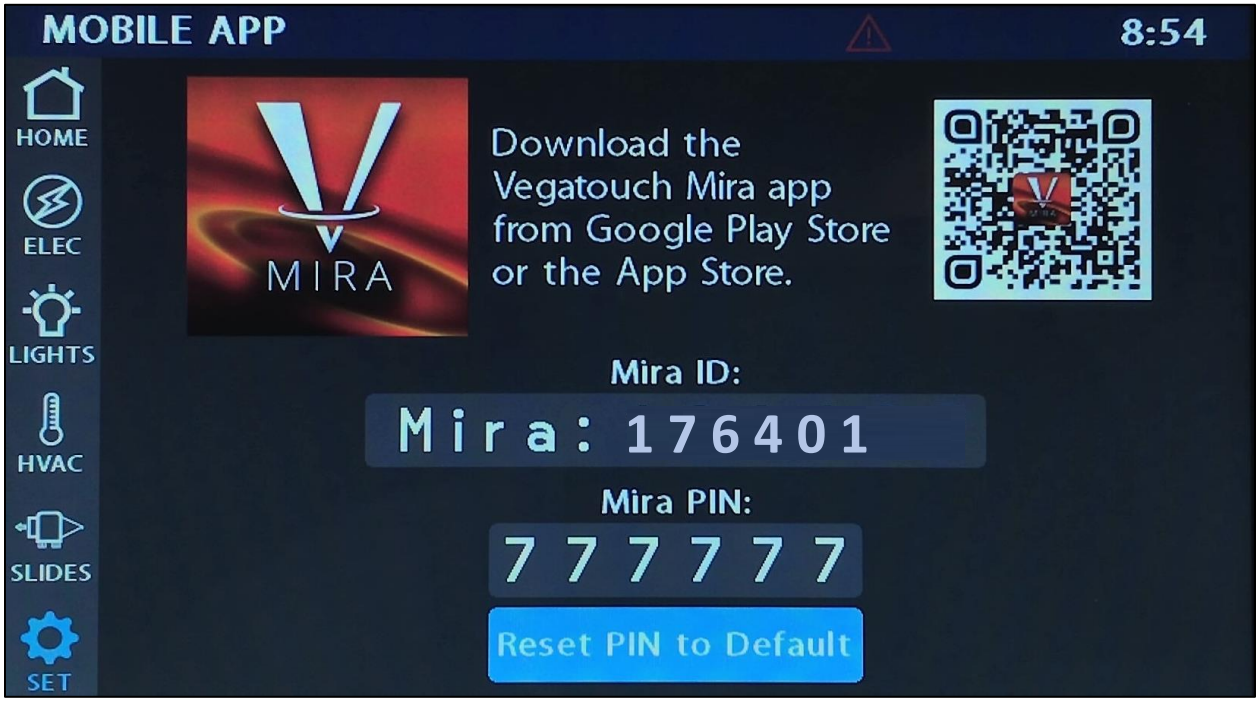


1. Tap to enter the Vegatouch Mira connection screen.
2. Tap to enter the Network Diagnostics page.
3. Navigate to the Switch Panel Info page.
4. Tap the temperature units display to switch between Fahrenheit and Celsius.
5. Floorplan display.
6. Drag the slider to adjust screen brightness.
7. When Auto Dimming is enabled, the screen will enter sleep mode after 60 seconds of inactivity. Tap anywhere on the screen to wake it up. Please note that even if Auto Dimming has been disabled, the screen will still enter sleep mode after 4 hours of inactivity during daytime hours (5am – 10:59pm) and after 15 minutes of inactivity during nighttime hours (11pm-4:59am) as the result of a built-in screen saver that cannot be disabled.
8. Cleaning Mode - Disables touchscreen functionality (15 seconds) for the purpose of cleaning.
9. Tap the buttons to adjust time or select 24-hour mode.

Please note the GUI and Logic Controller Versions and have these numbers available before calling Technical Support.

Settings/Mobile App

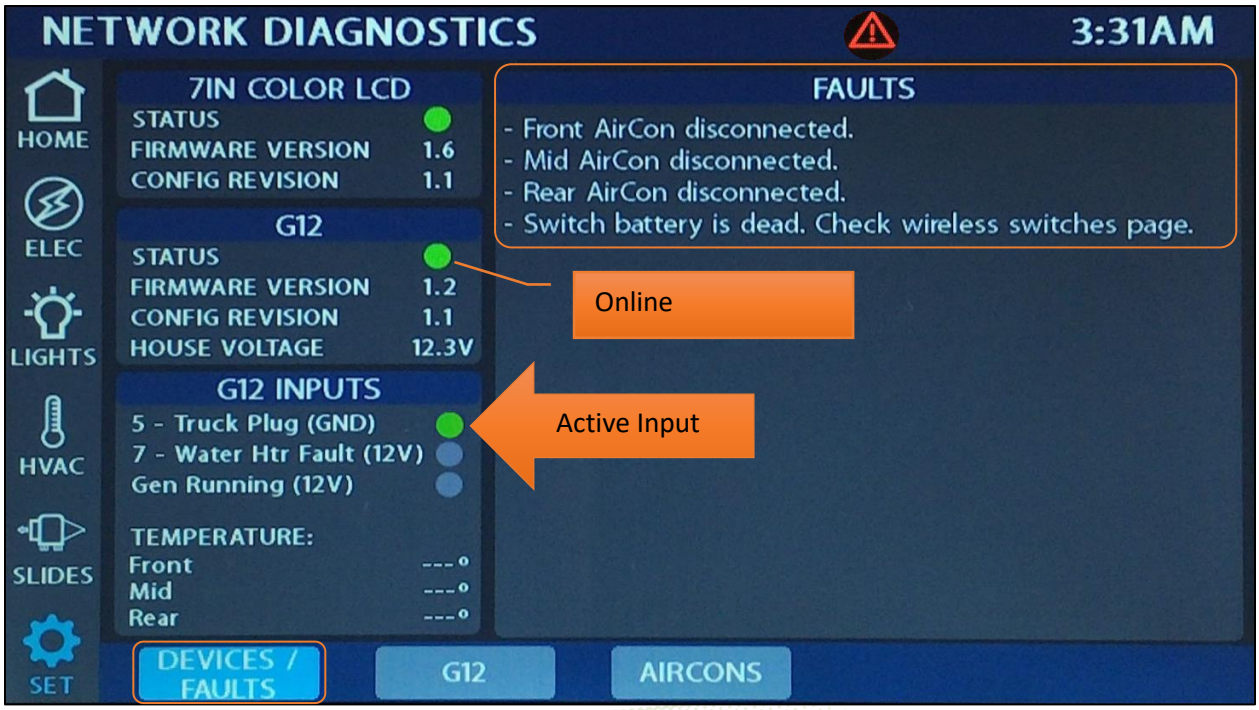
Vegatouch Mira is a wireless control module that easily connects to any Android or iOS device to give total control to many electrical, electronic and mechanical systems in your coach. Pair any device with the coach's built-in interface to monitor and control many coach components.



Settings/Network Diagnostics

The fault trianlge will display anytime the system is experiencing a fault. Tapping the triangle will bring user to this screen for more fault information.

Devices/Faults:
This screen will show the status of the Lyra screen, the G12 Panel and the Aircons. It will also display any current faults the system is experiencing.



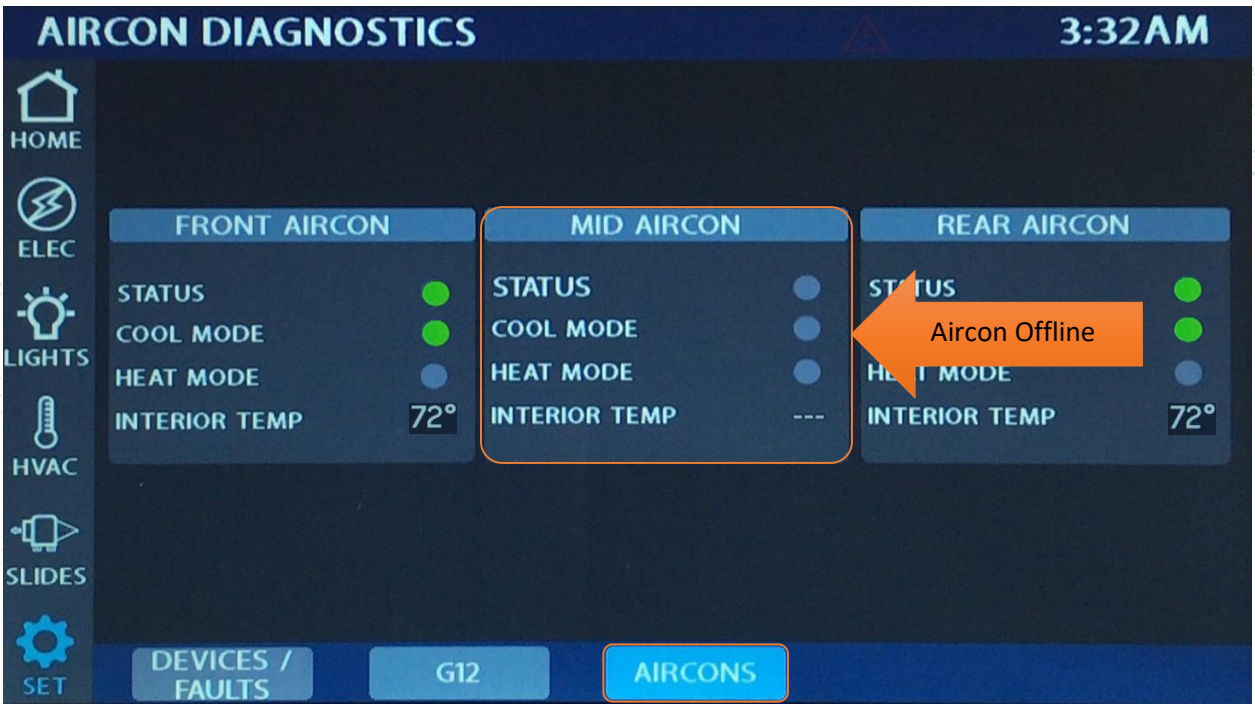
G12:

Select a channel tab to see the status of each G12 output.



AirCons:

The Aircons tab will display the operational status of each Aircon.



Settings/Switch Panel Info

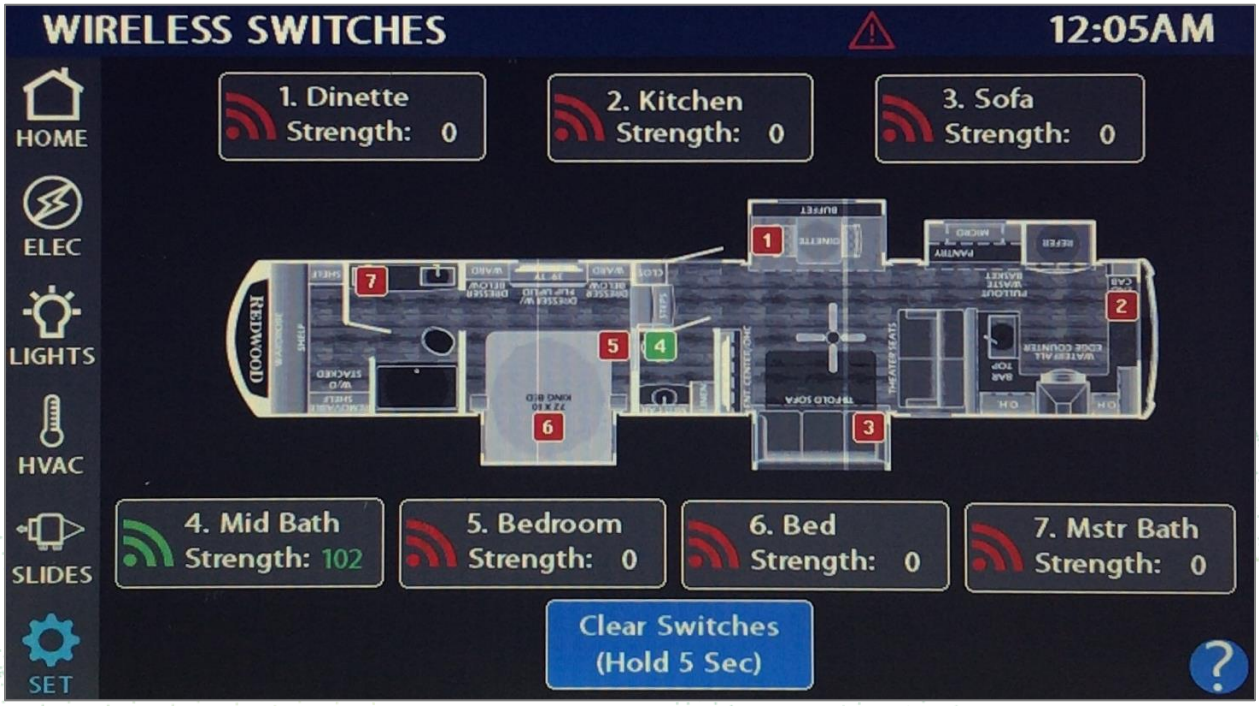
The color-coded Wireless Graphic and Signal Strength Value will identify the status of a wireless switch panel.

- Green – Over 100 (Strong)
- Yellow – 85-100 (Medium)
- Red – Less than 85 (Weak)



Red Wireless Graphic with a Zero reading – The switch is currently disconnected from the screen. It is likely that the battery inside your switch panel needs replaced. The wireless switch panel in your coach will illuminate a green LED whenever a button is pressed. If the LED on your switch panel does not illuminate when you press a button on your switch, you will need to replace the 2032 coin cell battery.

If the LED is illuminating but the switch still won't function, follow the pairing procedure on the next page.



Wireless Switch Pairing

Red switch indicator with a zero reading – The switch is currently disconnected from the screen. It is likely that the battery inside your switch panel needs replaced. The wireless switch panel in your coach will illuminate a green LED whenever a button is pressed. If the LED on your switch panel does not illuminate when you press a button on your switch, you will need to replace the 2032 coin cell battery.

If a new battery will not fix the issue, you might need to pair the switch panel to the screen.

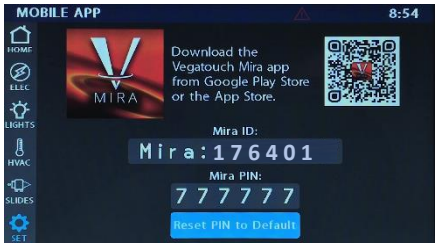
1. Tap the switch graphic for the switch panel you'd like to pair.
2. Tap Start Pairing. You'll have 30 seconds to press and hold any 2 buttons on the switch panel at the same time for 5 seconds.
3. Tap Done once the pairing successful message appears. It may take up to 10 minutes for the battery switch indicator to turn Green, but the switch should work instantly once paired. If at this point the switch still fails to work, press and hold the Clear button (not pictured) for 3 seconds and repeat the pairing procedure once again.



Notice: Make sure that Bluetooth is turned ON in your smart device settings before proceeding.

Locate the Login Information:

The login information can be found by clicking on the Mobile App button on the settings page of the touchscreen or from the Mira module's label.



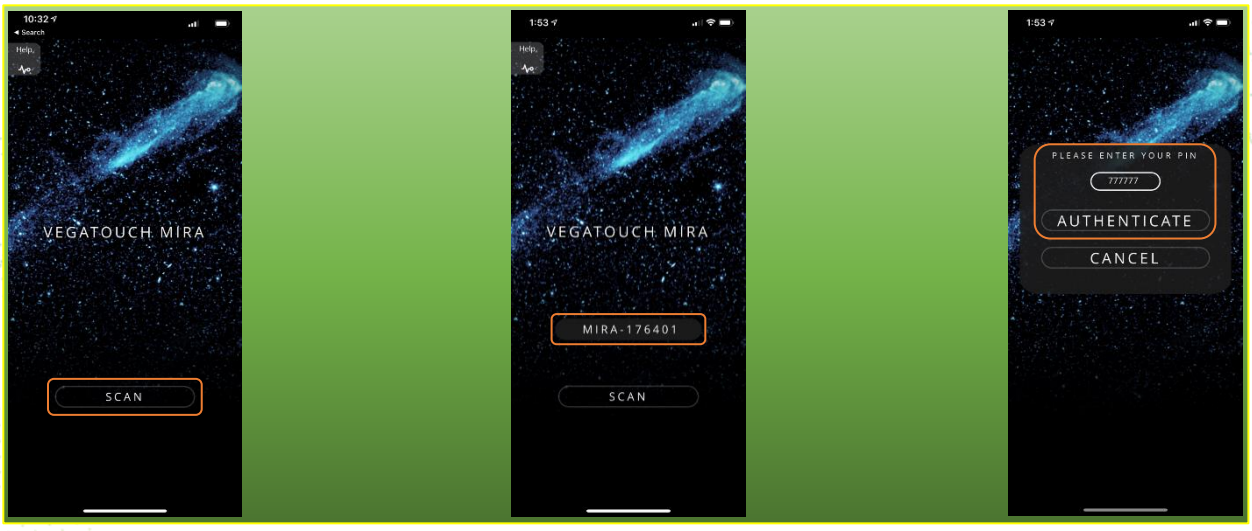


Download:

Download Vegatouch Mira from the Google Play store or the App Store. Once the download has finished, install the app and open it.

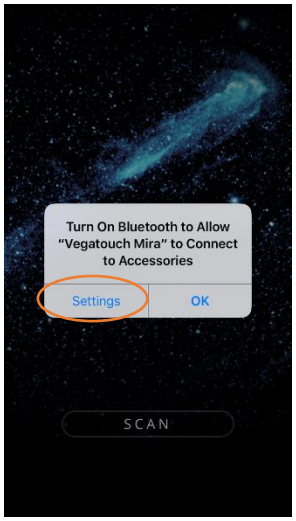
Setup:

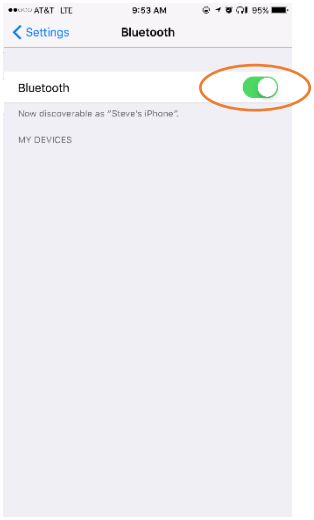
Tap SCAN to find the Mira Module's signal. After scanning, any Mira Module in your area will appear on the screen. Tap the ID # that matches the one on your Mira label. Enter the PIN number from the Mira label and press AUTHENTICATE to connect to the system.



Notice: iOS Setup Tips

Turn on Bluetooth to allow Vegatouch Mira to connect to Accessories.





If you do not have Bluetooth turned ON in your iOS settings you will see this screen. Do not click OK, you must click SETTINGS. Your Bluetooth Settings page will now appear and you should turn Bluetooth ON.

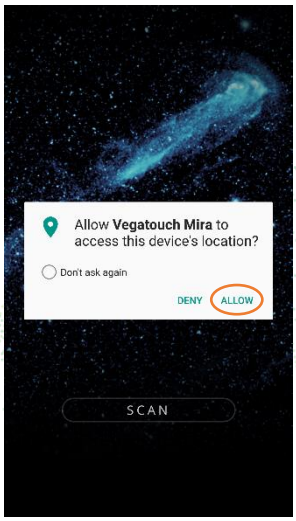
Location Services Required

To enable Location Services on your Apple device:

1. Go to settings/Privacy/Location Services.
2. Make sure that Location Services is ON.
3. Scroll down to find your app.
4. Tap the app and select "Always allow access to your location."

Notice: Android Setup Tips

Allow Vegatouch Mira to access this device's location.



Mira will need to be allowed access to your location. Click ALLOW when you see this screen.

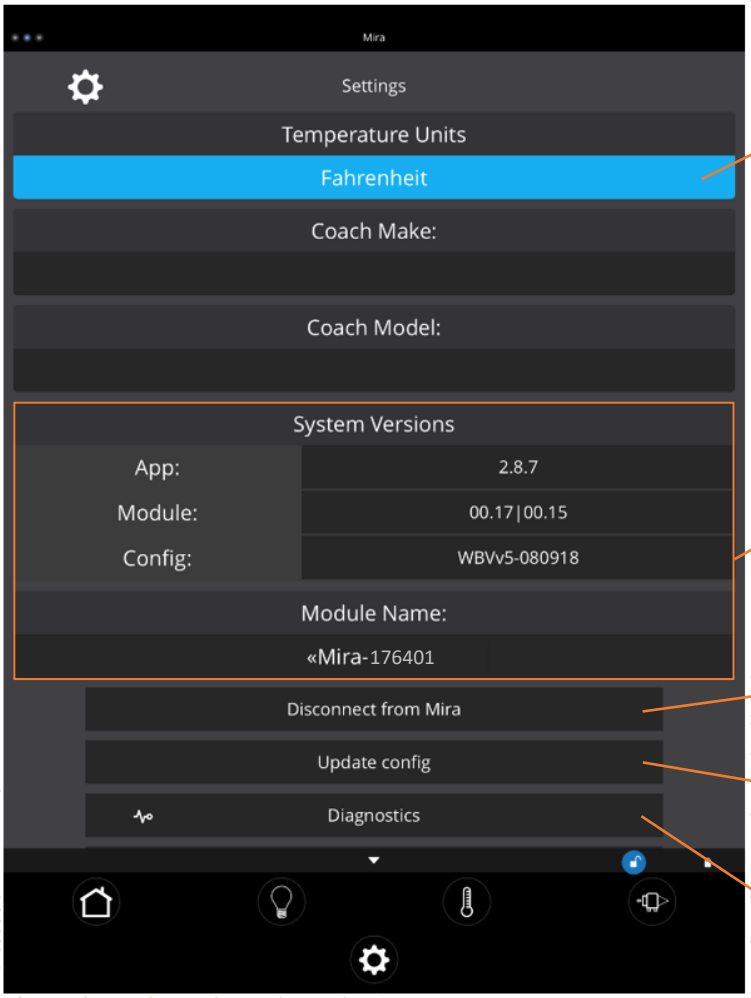
To enable Location Services on your Android device:

1. Open your phone's Settings app.
2. Tap Location/App Permission
   -If you don't see "Location" tap Security & Location/Location.
   -If you have a work profile, tap Advanced/Location.
3. Under "Allowed all the time" and "Allowed only while in use" view the apps that can use your phone's location, tap it, then choose the location access for the app.
4. To change the App's permissions, tap it, then choose the location access for the app.

App Settings:

Access the App Settings page by tapping the triangle (at the bottom of the screen) to expose the Settings button. Tap the gear to visit the settings page.





Tap the Temperature Units selection to choose between Fahrenheit and Celsius.

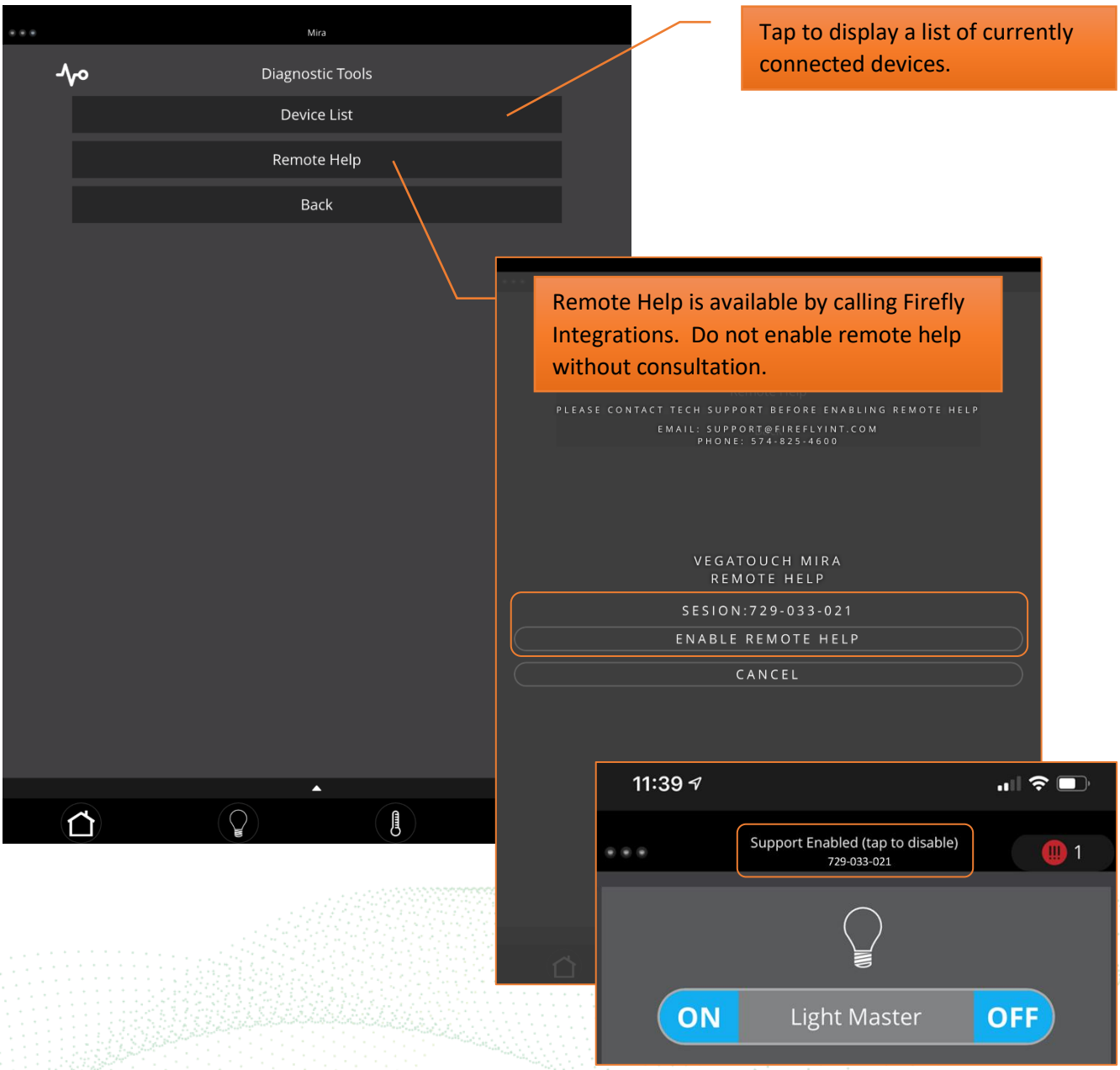
System Information and Mira Name.

Tap to disconnect your device from Mira.

Tapping Update Config will force a download of the config from the cloud.

Tap to enter the Diagnostic Tools screen.

Diagnostic Tools:

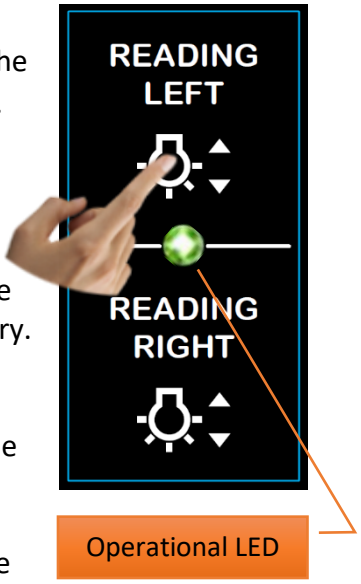


Remote Help:

If instructed by Firefly, tap Enable Remote Help for advanced technical support. Once enabled, provide the Session ID to allow Firefly to remotely connect to your Mira app (internet connection required). To disable Remote Help, simply tap the Session ID number from the Home page of your Mira app.

SSP17 Switch Panels

Your coach uses an SSP17 switch panel to control lighting and other functions. Lights that are dimmable will have Up/Down arrows next to the icon. Press and hold these buttons to ramp the brightness up and down. Each time that a button is pressed, the Operational LED will illuminate green to indicate that the command has been sent to the touchscreen.



SSP17 switch panels use wireless RF technology to communicate with the Lyra touchscreen. These switches are powered by a 2032-coin cell battery. If you press a switch panel button and the operational LED does not illuminate, you'll need to change the battery. Simply use your fingers to pry the switch panel away from the wall-mounted backplate to access the battery compartment on the back of the switch.

Once you replace the battery, line the switch panel up with the backplate and apply pressure to snap the switch panel back into place.



Mira NET LED Status Key

The NET LED on your Mira module can change color in different situations. Use the following key to determine the operational status of your module.

	Off	Device has no power or has completely failed
	Fast flashing green (4 times/sec)	Device is attempting to make initial connection to the CAN network and good files
	Solid green	Device is operating correctly and has seen a CAN message in the past 5 seconds and good files
	Slow flashing green (1 time/sec)	Device was active on the CAN bus but has not seen a valid message in 5 seconds and good files
	Alternating red and yellow	Device has not seen CAN messages in 30 seconds and good files
	Alternating yellow and green	Device is currently active on the CAN bus but has not seen a CAN message within a 30s interval 2 for more times since the last power cycle and good files
	Solid red	Device has not seen a CAN message in the past 60 seconds and good files
	Fast alternating green and blue (4 times/sec)	Device is attempting to make initial connection to the CAN network and corrupted files
	Solid blue	Device is operating correctly and has seen a CAN message in the past 5 seconds and corrupted files
	Slow alternating green and blue (1 time/sec)	Device was active on the CAN bus but has not seen a valid message in 5 seconds and corrupted files
	Alternating red and blue	Device has not seen CAN messages in 30 seconds and corrupted files
	Alternating yellow and blue	Device is currently active on the CAN bus but has not seen a CAN message within a 30s interval 2 or more times during a power cycle and corrupted files
	Solid purple	Device has not seen a CAN message in the past 60 seconds and corrupted files
	Flashing white	Device pin is being reset
	Solid yellow	Device pin has been reset
	Flashing blue	Device does not have a valid application
	Flashing red (2 seconds)	Factory test: Red LED
	Flashing green (2 seconds)	Factory test: Green LED
	Flashing blue (2 seconds)	Factory test: Blue LED