EasyTouch RV™

Reference Manual

for Model

345

　　　　　　　　　　　　　　　　　　　　Revision 2.2

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The EasyTouch RV™ 345 model displays are Bluetooth and Wi-Fi enabled displays for remote access to your RV's comfort system. The 345 models were designed to directly replace the 12-volt DC AirXcel Coleman-Mach™ 9420-330 RV-C display. All functionality of the original control is preserved, alongside all of the new functionality that EasyTouch RV brings. Use this manual for detailed installation and operation of this product.

EasyTouch RV 345 Models and Compatible Replacements

EasyTouch RV 345 can be purchased in two colors. *Table 1* lists all EasyTouch RV 345 models.

EasyTouch RV 345 Model	Color
ASY-345-X01	Black
ASY-345-X02	White

Table 1

The EasyTouch RV 345 is designed to directly replace the AirXcel Coleman-Mach™ 9420-330 RV-C display. They communicate to air conditioner control board models 9430-754, 9430-758, and 9630-758. *Figure 1* shows a typical compatible replacement display.

Figure 1 - Coleman 9420-330 Display Replaced by EasyTouch RV 345

Included in the Box

EasyTouch RV model 345 is shipped with the following items:

- 1x EasyTouch RV 345 Display
- 1x Quick-Instruction Card
- 1x Mounting Bracket (*Figure 2*)
- 4x Screw Hole Covers

The mounting bracket is used during installation. The screw hole covers can be used to cover holes in the wall from the previous display if they are exposed.
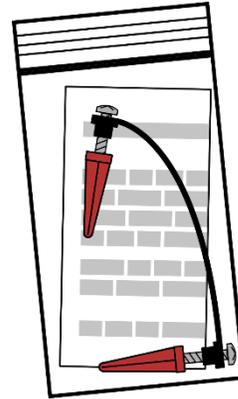

Figure 2 - Mounting Bracket and Instructions

Installing the Display

Safety

First, it is recommended to remove both AC and DC power from your system. Unplug your RV from shore power and turn off any converters or generators to remove AC power. Open your 12-volt DC bus breaker or fuse to de-energize your display. This greatly reduces the chance of any harmful electrical discharge, as well as preventing accidentally opening a fuse.

Removing the Old Display from the Wall

Push up on the display to release the front assembly from the back plate. There is an arrow on the side of the display pointing the direction to release, which should be up.

Remove the screws from the backplate to free it from the wall.

Wiring The Display

Flip the front assembly over to reveal the wire connections. Take a picture of the connections and note the wires used for the heaters in the screw terminals. Relate the wires to the terminal label on the circuit board next to each of them. Also note whether there is a removable 2-pin jumper installed or not, labelled "Terminator Enable". The rest of the wires should be attached by a four-pin square (2x2) connector for plug and play into EasyTouch RV.

Remove the wire connections by releasing the plugs and loosening the screw terminals. The 4-pin square connectors can simply be plugged in to either or both locations. Connect the heater wires from the screw terminals to the push-in connector based on *Table 2*.

For the heater outputs: make sure 3/8" of insulation is removed. Depress the button for the matching EasyTouch RV terminal to open its jaw. Slide the wire in fully and release the button to lock it in place.

If the "Terminator Enable" jumper is used in the OEM display then use the same or provided jumper in the center of the back of EasyTouch RV 345. Leave off if it is also off on your original display. Communication to the A/C zone control boards may not work if not installed per the OEM display.

| Original Terminal Name	Original Wire Color (write in here)	Matching EasyTouch Terminal Name	Function
J2 and J3	4-pin Mating Plugs +12V: GND: CANL: CANH:	J10 and J11	$12V_{DC}$ Power $12V_{DC}$ Ground CAN Low (communication) CAN High (communication)
OUT #1		H1	Furnace/Hydronic Heat Zone 1
OUT #2		H2	Furnace/Hydronic Heat Zone 2
OUT #3		H3	Furnace/Hydronic Heat Zone 3
OUT #4		H4	Furnace/Hydronic Heat Zone 4
Terminator Enable		JP10	CAN terminator

Table 2 - EasyTouch RV 345 Wiring Chart
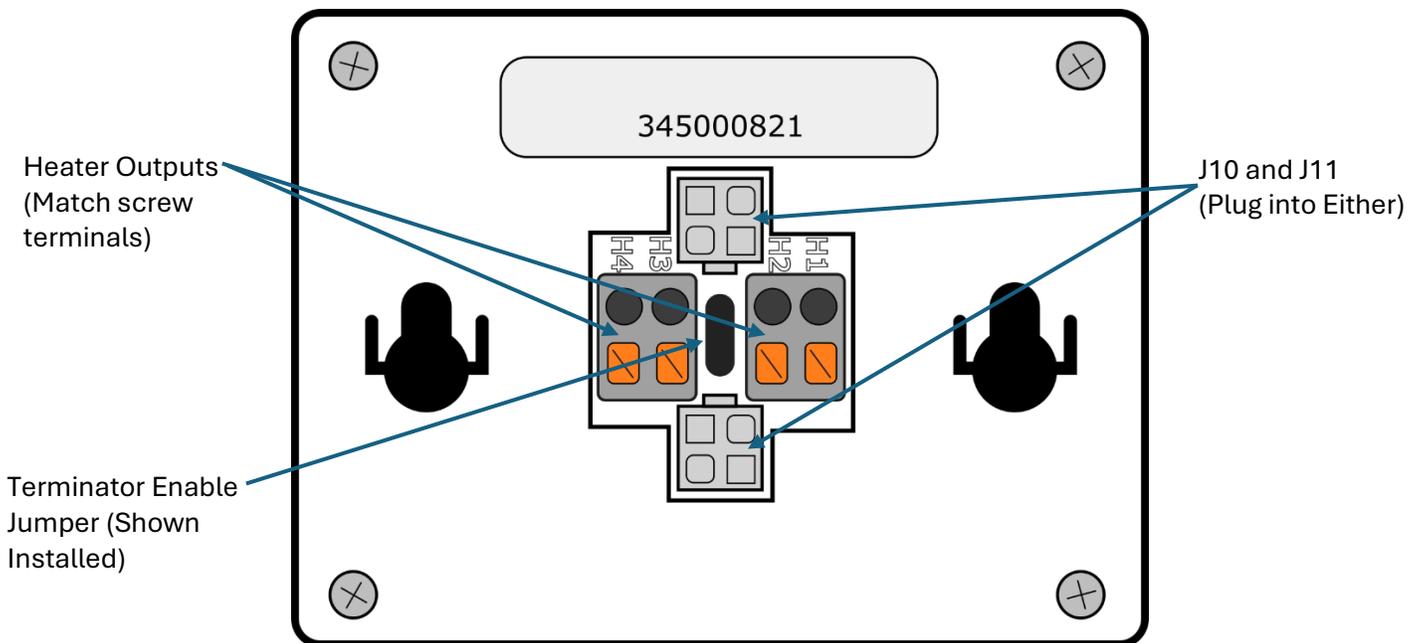
Figure 3 - Back of EasyTouch RV 345

Re-apply Power

Restore DC power. The display screen should light up and boot into the main menus. Restore AC power so that your appliances can run again. Move on to the section *Mounting the Display*, or the section *Initial Setup Instructions* and mount the display later.
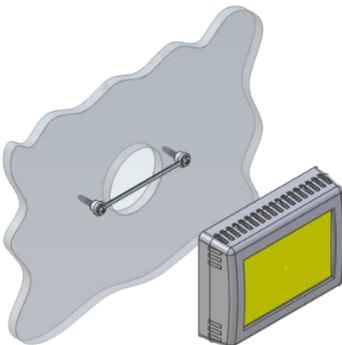
Mounting the Display

Step 1: Level the mounting bracket horizontally across the hole with the smaller diameter of the mounting button against the wall.

Step 2: Screw in one screw and level the buttons so the display will be straight when installed. Screw into the smaller hole of the two buttons.

Step 3: Screw in the second screw and make sure the buttons are flat and level. The wider inner diameter button has some play to make these adjustments easier.
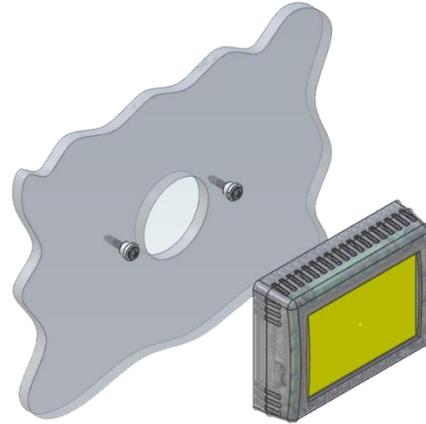
Step 4: Cut away the center of the mounting bracket before mounting the display on the wall.
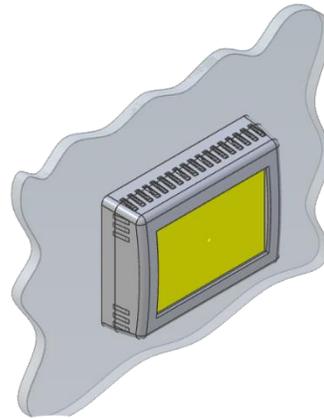
Step 5: Align the buttons with the holes in the back of the display. Press the display against the wall and gently slide the display down to lock it in place.

Initial Setup Instructions

EasyTouch RV 345 also requires some software setup before use. This tells the display what appliances are available.

Configure Available Zones and Appliances

Tap the Settings button on the main screen, then navigate to and tap the Setup button. Tap the plus and minus zone buttons to set how many zones you have in your system. Use the checkboxes of each zone to set its options: gas heat, electric heat, and for zone 1, temperature sensor selection. You can also control RV-C enabled MAXXFans and configure them here. Press the Save button when done.

All setup options should match exactly as setup in your OEM display.

NOTE: You typically *cannot* select internal temperature sensor for zone 1 arbitrarily and must match the OEM display's selection. Micro-Air cannot assist in installing hardware to allow choosing a different option. The choice is typically made by the RV manufacturer when the RV is designed.
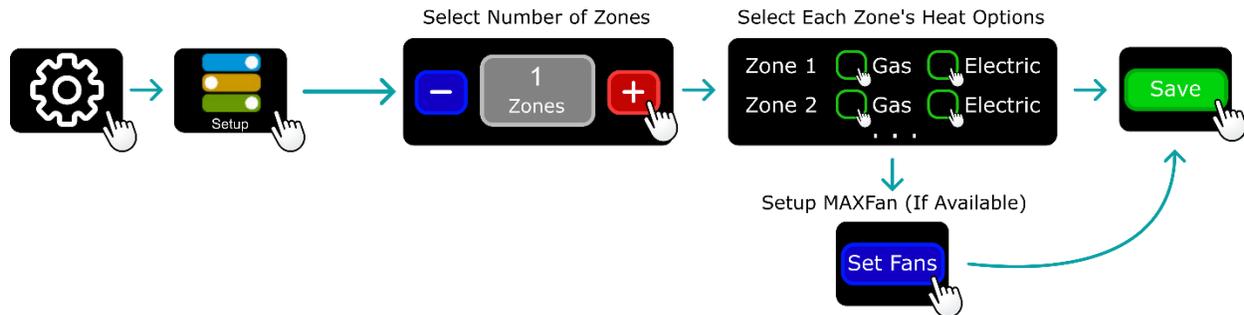
Connecting Remotely

EasyTouch RV can be operated entirely by the touchscreen, however you can also communicate, monitor, and modify operation of it wirelessly using the EasyTouch RV application (mobile app). Some extra features will require a wireless connection and are described in their sections. See *Appendix A: Working Wirelessly* for details.

EasyTouch RV App icon

It is recommended to make sure all aspects of the system are working from the display itself before moving on to trying the app. The app mirrors the display touchscreen operation when connected so familiarizing yourself with the display touchscreen first will help understand intended operation and isolate any issues during installation.

Operating the Display - Touchscreen

Main Screen

This screen is where most time is spent using the display. This screen allows you to set and monitor the desired operation of the display, shown in *Figure 4*.

(1) Zone Selection

This selection shows which zone is currently chosen for monitoring and viewing. All other graphical elements on this screen relate to this zone. Tap this button to cycle through the available zones. The other graphical elements will update to reflect the status of the newly selected zone.

Figure 4 - Main Screen

(2) Operational Mode

This is the main operating state of the system. The graphics correspond to how your appliances will operate. Tap it to change to any available mode or turn the system off.

Note: If you do not find an expected zone or mode then see section *Initial Setup Instructions*

(3) Fan Speed

This sets how the electric fan (not the furnace blower!) will operate in conjunction with the selected *(2) Operational Mode*. Tap it to iterate the available fan speeds. EasyTouch RV offers improved electric fan control whenever possible.

No fan button for a mode means there is no fan control for the selected mode. Not all fan speeds are available for the selected mode and there is no control of the furnace blower from the display.

- **Full Auto**: Turns the electric fan on and off with a cycle. It automatically adjusts the speed based on the difference between setpoint and inside temperature
- **Cycled**: Turns the electric fan on and off with a cycle at the selected speed only
- **Manual**: Always runs the electric fan at the selected speed
- **Off**: Some modes can be set to not use the electric overhead fan with any cycle

(4) Temperature Setpoint

This button shows the current temperature setpoint for the selected *(2) Operational Mode*. Tap it to adjust the temperature setpoint. Setpoints are tied to each mode to remember the last setting. If there is no setpoint button then there is no setpoint control for the selected mode.

(5) Inside Temperature

This is the temperature reading for the space that the display is trying to temper, determined by an ambient air sensor in the display or connected to the zone control board in the A/C. Default operation is to always use the sensor connected to the zone control board. Zone 1 can have the sensor in the display selected from the Setup Screen. See *Configure Available Zones and Appliances* for more.
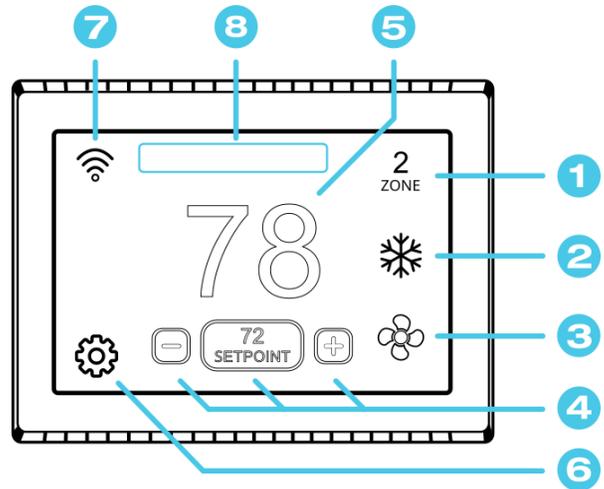
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(6) Settings

This button will enter the settings screens. Settings are mostly for configuring the display and making changes that are not common or found on the main screen. See section *Settings Screens* for more details.

(7) Wi-Fi Status

The Wi-Fi indicator shows the state of the display's Wi-Fi connection. A red icon means no connection to an internet enabling device. Red with an exclamation means it is connected to an internet enabling device but does not have internet. Green means it is connected to the internet. The number of bars indicate strength. Tap the icon for more information about the Wi-Fi connection.

See the *Connecting to a New Wi-Fi Network* for more details.

Max Wi-Fi Recovery

This button on the *(7) Wi-Fi Status* page, when enabled, will restart the thermostat if it detects an outage for too long. This is intended to make sure the Wi-Fi connection from the thermostat stays up as much as possible.

Sometimes, a cooling or heating cycle may terminate to accommodate this functionality. If this is undesirable, it is recommended to turn this feature off while at the space and reenable it when you plan to be away.

(8) Status Message

Various messages may be shown here to indicate active operations. See the *Status Messages* section for potential messages and their meanings.
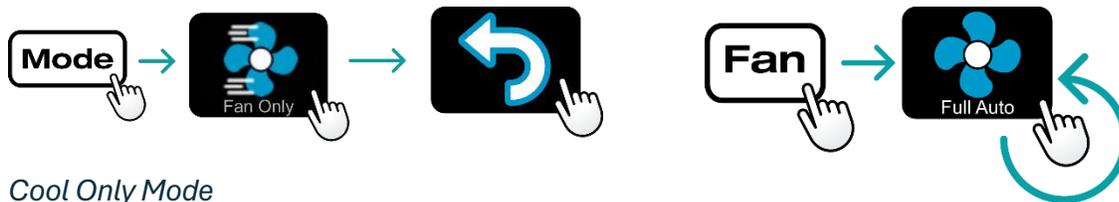
Operational Modes

All modes operate the overhead electric fan and/or a heating or cooling cycle based on the current setpoint, relative to the inside ambient temperature. To get appliance operation:

1. Set the desired zone to adjust by tapping the *(1) Zone Selection* button.
2. Set the desired mode by tapping the *(2) Operational Mode* and choosing the desired mode, zone off, or system off to turn all zones off.
3. Tap the *(3) Fan Speed* button if applicable to set the desired electric fan operation.
4. Tap the *(4) Temperature Setpoint* button if applicable to set the desired ambient temperature for this zone.
5. Repeat from step 1 as needed.

Fans and Fan Only Mode

This mode lets the fan operate based on the chosen *(3) Fan Speed*. This will circulate the air using the electric fan of the A/C without operating any heating or cooling cycles.

Cool Only Mode

This mode only runs a cool cycle to maintain the cooling set-point in the selected zone. Set the *(2) Operational Mode* to Cool and the desired *(3) Fan Speed* and *(4) Temperature Setpoint*.

Electric Heat Only Mode

This mode only runs an electric heat cycle to maintain the heating set-point in the selected zone. This may be a heat pump or a heat strip depending on the factory zone set up. Set the *(2) Operational Mode* to Electric Heat and the desired *(3) Fan Speed* and *(4) Temperature Setpoint*.

Auxiliary Heat Only Mode

This mode only runs a "forced-air" auxiliary heat cycle to maintain the heating set-point in the selected zone. Set the *(2) Operational Mode* to Furnace or Aqua and the desired *(3) Fan Speed* and *(4) Temperature Setpoint*.

Both Heat Mode

This mode will start a cycle with the available electric heat. If the system determines that the electric heat cannot meet the demand then it will run the "forced air" auxiliary heat appliance. Either of the following conditions will call for auxiliary heat:

- The electric heat appliance has run for 20 minutes without satisfying the setpoint
- The inside temperature is more than 2C / 4F cooler than the setpoint

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Settings Screens

These settings are common to all displays. These allow for further configuration and control of the display and system behaviors. Each setting can be tapped to configure the related settings.

Settings Button

Tap the settings button as shown in section *(6) Settings* under *Main Screen* to view them.

Navigation

Use these buttons to flip through all the available settings or return to the main screen.

Previous Settings Page

Back to Main Menu

Next Settings Page

System Help

This screen displays a QR code that can be scanned to provide information about display operation and troubleshooting from the Micro-Air website. It also shows the current display firmware revision and the display's serial number.

Help Button

Display Brightness

This screen allows you to set the Active and Sleep brightness levels that are used by the display. Tap the associated up and down arrows to change their level. The screen will transition to sleep brightness after about 30 seconds of inactivity.

Brightness Button

Measurement Units

This setting determines the temperature scale to use in the display. Tap the Units button to toggle between Fahrenheit and Celsius.

Units Buttons

Touchscreen Calibration

The EasyTouch RV touchscreen is calibrated at the factory to accurately interpret your touch presses. Tapping the Touchscreen Calibrate Button will allow you to recalibrate the touch press area. Follow the on-screen prompts to calibrate the touchscreen.

Touchscreen Calibrate Button

Reset

This button gives options for settings that can be reset. Follow the prompts to confirm

- **Restart**: Turns the entire display off and back on
- **Reset Bluetooth**: Reset the saved Bluetooth Password in the display. Use this whenever you reset the password to your app account to regain remote access to the display
- **Reset All**: Restore settings like setpoints and modes to factory defaults
- **Clear Information**: Reset details like Wi-Fi credentials back to defaults

Reset Button

Temperature Reading Adjustment

This setting allows you to calibrate the inside temperature reading with an offset. For example, if the inside temperature reads 72F (22.2C) and you feel it is 75F (24C), you can use the up and down arrows on this page to increment the offset to +3F (+1.8C).

This setting only affects the sensor inside EasyTouch RV. It does *not* affect any remote sensors (optional from the factory) plugged into a zone control board. See section *(5) Inside Temperature* for more information.

Temperature Reading Adjustment

Setup

This setting is used to configure your display's operational settings and is slightly different for each EasyTouch RV model. Some simply display how the air conditioner control board that EasyTouch RV communicates with is configured. Others allow for telling EasyTouch RV what appliances it has connected to it. Tap the Switches button to see what configurations are available. See section *Initial Setup Instructions* for details on what must be configured, if any. Micro-Air cannot assist with manipulating and adding more appliances to your system.

Setup Button

Status Messages

Some messages may be displayed at the top of the main screen. *Table 3* shows the potential messages and their meaning.

Message Text	Description
NO RV-C RESPONSE	EasyTouch RV communicates on the RV-C CAN bus low and high wires. This means that no bus connection is found. This may show when power is first applied and is OK. Make sure that the connections at the back of EasyTouch RV are solid and secured and the 4-pin plug has no damage or loose pins. Make sure the wires leading out of the display and up to the zone control boards are connected. Make sure that the CAN terminator (JP10) is installed or not, compared to your original display. Make sure the zone control boards are still powered and operating.
NO ZONE RESPONSE	EasyTouch RV must be configured to know what zones to look for. This means it is finding a CAN bus connection, but not communication to the selected zone. Your number of zones must match the original system. Make sure that the CAN terminator (JP10) is installed or not, compared to your original display. See *Configure Available Zones and Appliances* for more details. If configured correctly then make sure the particular zone control board is still powered and operating.
BAD INDOOR SENSOR	EasyTouch RV has an ambient sensor for making decisions on when to operate a cycle. A remote sensor needs to be added or replaced, or EasyTouch RV needs to be repaired or replaced.

Table 3 - Status Message Descriptions

Smart-Device Application Features

Check for Updates

Checks to see if any updates are available for the display. The smart device application must have internet and the display must be connected to Wi-Fi with a green Wi-Fi symbol. Tap Check for Updates and follow the prompts.

Note: Beta updates may be available from time to time, but these are for people working with Micro-Air in testing them. Some features may not work as expected. The current version firmware can be restored by checking for updates again.

Edit Wi-Fi Settings or Connect to Wi-Fi

This is where you will make the connection from the display to the internet. See section *Connecting to a New Wi-Fi Network* for details on how to use this feature. The app must be connected to the display over Bluetooth to see this option.

Refresh Configuration

This setting resets the saved configuration in the app if a configuration change is made at the display. If there is a difference between the modes and zones available on the app compared to the display then press this button to sync the app to the display. First time connection will grab the correct settings but activate this setting to force the sync.

Appendix A: Working Wirelessly

This display may be operated remotely using either Bluetooth or Wi-Fi. All connectivity is performed through the EasyTouch RV App on a smart device. The app is downloaded from the Google Play store or Apple App store. The first time the app is opened, it will ask to create an account. Create your account and follow the prompts to connect your display.

EasyTouch RV App icon

Bluetooth is a limited range method to connect, typically used when near the display. The display can be connected to an internet-connected network, where you can then access the display from anywhere you have an internet connection with the app.

If a second user is going to use the display remotely, they MUST use the same account and password that the first user assigned to the display. Each display can only be assigned to a single account, but many users can control the display if they use the same account.

First Connection Steps

Note: An internet connection on your smart device is necessary for these steps.

1. EasyTouch RV uses BLE which is a special implementation of Bluetooth. The smart device and display do not "Pair" like other common devices. Ensure that Bluetooth is enabled in the smart device settings, and that the app has Bluetooth permissions. Android systems have changed over time and some users may need to have location permissions give to the app, location permissions turned on in general, our give "nearby devices" permissions to the app.
2. Start the app on your smart device. Bluetooth permissions must be accepted and may prompt you for them. The app will open to a main page where you can log-in, delete an account, recover a lost password, or create an account. Tap create account and enter your name, email, and a password at the prompts. The system will send a confirmation email to your inbox. Enter the number in the confirmation email when asked.
3. Once the account is created, the application may ask to add a device. If your display is powered and permissions are set up, it will show in the list to be added to your account, found over Bluetooth. Select the device and enter a name for it. This name is used to identify and connect to it in the future.
4. If you added a control, the app will ask if you want to connect the display to Wi-Fi now. Enter your SSID (network name) and password of the network you want to connect the display to.

Adding a Display to Your Account

Follow the next steps if you did not add a display or there are more to add.

1. Open the app and you should be signed in from the directions of the *First Connection Steps* section. Press the settings gear and "Add Device".
2. The nearby display (s) should be listed in the "Devices Found" list. These are the displays heard over Bluetooth. Select the device and enter a name for the device.
3. Once added, go back to the "Devices" screen, which lists all the displays added to your account.
4. Select the display you want to control from the "Devices" list to connect.

Connecting to a New Wi-Fi Network

You can connect to the display from anywhere using the app when the display is connected to an internet source. The internet source **must** be operating on a 2.4GHz network to connect to EasyTouch.

1. Connect to the display in Bluetooth and press the settings gear. Apple users select Bluetooth on the first page.
2. Select "Connect to Wi-Fi" or similar from the settings window.
3. Connect to a network:
   a. The SSID (network name) will say "searching" then switch to "select". Tap "select" to choose from a network the display can hear.
        i. Alternatively, enter the SSID manually (case sensitive)
   b. Enter the password (case sensitive).
4. Press OK and the screen will return to the selection screen. The display will reset and a green Wi-Fi symbol will appear on the main display screen if the connection was successful.
5. With a green Wi-Fi symbol, you can now connect to the display from anywhere using the app over the internet.

Updating The EasyTouch RV Display

Ensuring you have the latest display software is key to having all the latest features.

1. Ensure the display is connected to Wi-Fi with a green Wi-Fi symbol.
2. Connect to the display with the app and press the app's settings gear. Then tap Check for Updates.
3. Follow the prompts to update the display or ensure that you already have the latest software.

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Appendix B: Troubleshooting

This section has some troubleshooting suggestions based on what you may find with this display in particular. Please take a look at our *Quick Start and FAQ Manual* for typical questions that may arise when using the display or the app, as well as quick instructions for common operations.

I Always Measure 77 Degrees F (25 C) for Zone 1

OEM control boards would sometimes use a "dummy" sensor that always reads the same for zone 1. These systems expect to have "Use Internal Sensor" enabled for zone 1 and is how your OEM display should have been set. This is enabled from the EasyTouch RV Setup screen as described in the *Configure Available Zones and Appliances* section.

Make sure you have the latest display software using section *Updating The EasyTouch RV Display*.

Wi-Fi Troubleshooting

This is a list of potential fixes we have found for most customers that have trouble connecting the display to the internet. If you still have trouble then navigate to our *Micro-Air EasyTouch RV Knowledge Bank* that has a troubleshooting section. See the WiFi troubleshooting articles for the latest information.

Blue Wi-Fi Icon – No connection

- SSID (Network name) and password are both case sensitive.
- Be sure you are connecting to a 2.4 GHz network and not a 5GHz or 6GHz network.
- Set the security to WPA2 and TKIP+AES if you are having trouble.
- The display has a limit of 31 characters for the SSID and 50 for the password.
- Ensure the number of devices limit for the network is not full.
- Ensure the Wi-Fi source is not out of range or metal partitions blocking the signal.
- Try a guest network or mobile hotspot that may have reduced restrictions.
- Reset the router to renew the DHCP lease.
- If you are in a metal enclosure, try moving the router or display a few inches (even if temporary) and trying again.
- If using MAC filtering, add the display to the allowed devices list.
- Try assigning a DHCP reservation to the display's MAC address.

Red Wi-Fi Icon – Connected without Internet

- The router must have an internet connection
- Server may be down, check back at a later time
- Be sure there is no firewall in the router blocking the incoming messages (port 8883, MQTT). Place the display's IP or MAC address into the router's DMZ settings to bypass any firewalls.

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More Information and Resources

Micro-Air EasyTouch RV Knowledge Bank

Home page of the knowledge bank for the latest guides on setup, operation, and troubleshooting.

https://www.micro-air.com/kb_easytouch_rv.htm

Quick Start and FAQ Manual

Installation section of the Knowledge Bank, which has the quick start and FAQ manual at the top.

https://www.micro-air.com/kb-easytouchrv/cat_installation.htm

Dealer Map

This is a map of all technicians and RV shops associated with Micro-Air. You can use these businesses for installation services.

https://www.microair.net/pages/find-a-dealer

Main Website

Main website for buying our products and contacting us for support. Please read over the rest of the *Appendix B: Troubleshooting* section, the *Quick Start and FAQ Manual*, and the rest of this manual to see if it has the answers to your questions or issues. If you still have trouble, be sure to provide what product you have, model number, serial number, and a description of what is happening and what you have tried when contacting us.

https://www.microair.net/