



# MANUAL: Tactile Touchscreen Controller User's Guide

## INSTRUCTIONS FOR INSTALLATION, SAFE OPERATION AND MAINTENANCE

**⚠ DANGER**

Understand manual before use. Operation of this device without understanding the manual and receiving proper training is a misuse of this equipment.




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**PERSONAL RESPONSIBILITY CODE**

The member companies of FEMSA that provide emergency response equipment and services want responders to know and understand the following:





1. Firefighting and Emergency Response are inherently dangerous activities requiring proper training in their hazards and the use of extreme caution at all times.
2. It is your responsibility to read and understand any user's instructions, including purpose and limitations, provided with any piece of equipment you may be called upon to use.
3. It is your responsibility to know that you have been properly trained in Firefighting and /or Emergency Response and in the use, precautions, and care of any equipment you may be called upon to use.
4. It is your responsibility to be in proper physical condition and to maintain the personal skill level required to operate any equipment you may be called upon to use.
5. It is your responsibility to know that your equipment is in operable condition and has been maintained in accordance with the manufacturer's instructions.
6. Failure to follow these guidelines may result in death, burns or other severe injury.







Fire and Emergency Manufacturers and Service Association  
P.O. Box 147, Lynnfield, MA 01940 • www.FEMSA.org

## 1.0 MEANING OF SAFETY SIGNAL WORDS

A safety related message is identified by a safety alert symbol and a signal word to indicate the level of risk involved with a particular hazard. Per ANSI standard Z535.6-2006, the definitions of the four signal words are as follows:

	<b>DANGER</b> indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	<b>WARNING</b> indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	<b>CAUTION</b> indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
	<b>NOTICE</b> is used to address practices not related to personal injury.

## 2.0 SAFETY

	The Tactile Touchscreen Controller system is not rated as ignition proof, explosion proof, or intrinsically safe. Use in locations with adequate ventilation and no hazard of flammable vapor buildup.
	Remote controlled equipment moves without warning, which can place nearby persons at risk of pinch points, loss of footing, or stream impact. Assume command of remote operation only after safe zones have been established. Keep clear of powered equipment while the controls are active.
	The Tactile Touchscreen Controller is a battery-powered device, which has a limited battery life. Failure to keep the device sufficiently charged may result in a loss of functionality. Recharge the device regularly and ensure that it maintains a satisfactory battery level.
	While the Tactile Touchscreen Controller is rated to be dust proof and waterproof, prolonged exposure to adverse and/or extreme conditions may compromise the device's seals. Take care to not fully immerse the device in water for more than a few minutes and mitigate all other exposure. Ensure that the device's port seals are in position before use.

### 3.0 SYSTEM OVERVIEW

The Tactile Touchscreen Controller (TTC) works in conjunction with the BLUETOOTH MODULE (YE-BT1) to wirelessly control TFT monitors, nozzles, valves, and Extend-a-Guns.

The YE-BT1 is plugged into the monitor's 4 wire power/communication wiring to enable the TTC to control the monitor using a Bluetooth link. Bluetooth control may be used in addition to all other control devices on the monitor's RS485 communication bus. The Bluetooth signal transmits over a line-of-sight distance of 100 ft (30 m).

The rechargeable TTC hand-held smart device runs a software app that pairs to a YE-BT1, transmits touch screen commands to the monitor, and receives data from the monitor. There are no monthly cellular service fees because cellular communication is disabled. The TTC is not intended for continuous outdoor storage, direct exposure to prolonged sunlight, or immersion. The touch screen may not respond well in extreme storm or cold conditions, therefore it should not be relied on as the sole method for monitor control.

All features may not be available on monitors purchased prior to November 2018.

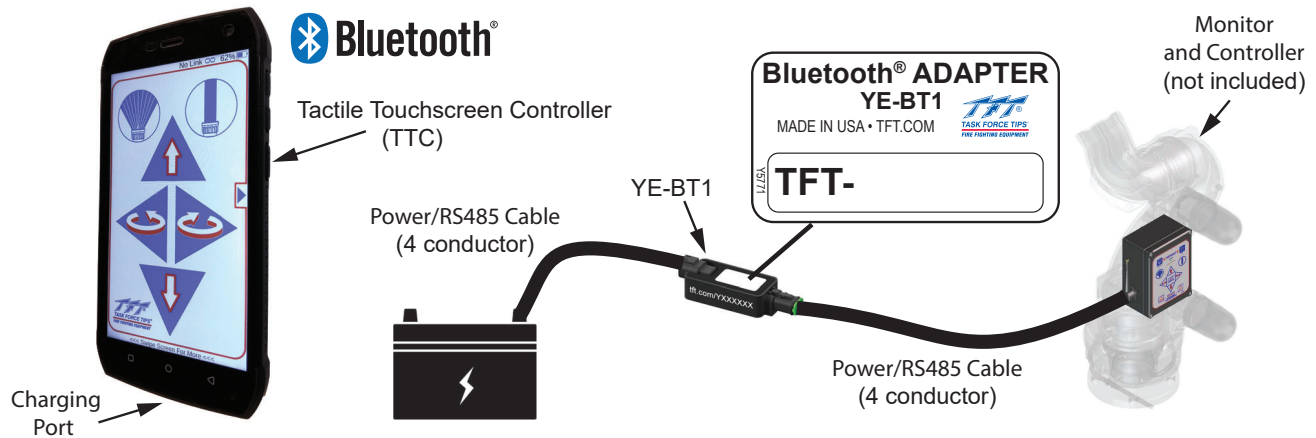


Figure 3.0

#### 3.0.1 BLUETOOTH MODULE (YE-BT1) MOUNTING

Select an open location with the least amount of interferences while still providing adequate signal to a TTC controller. Mounting space required will be 5.1" x 1.6" (129 x 42 mm). Height clearances require a minimum of 1.4" (34 mm) to allow the adapter to fit properly. Refer to Figure 3.0.1 for mounting dimensions. Allow at least 6" of slack in cable.

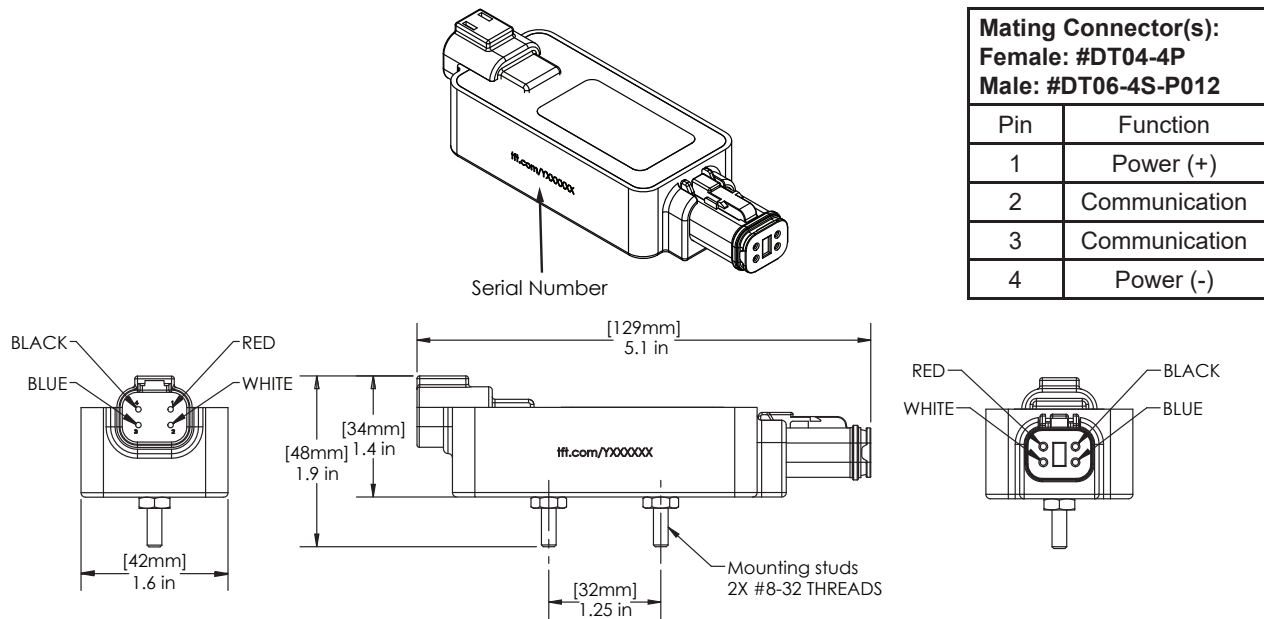


Figure 3.0.1

#### 3.0.2 TTC (YE-RF-BT) MOUNTING

Mounting and securing the TTC is the responsibility of the installer. It must be mounted in accordance with the local standards and regulations for the type of vehicle which it is installed. The power supply to the TTC needs to be a minimum 1500mA (1.5A) 5V USB plug to provide adequate power for charging and operation of the TTC. The TTC includes an internal rechargeable battery which provides power for a period of time while not plugged in. The TTC is equipped with a Micro USB power connection.

## 4.0 TACTILE TOUCHSCREEN CONTROLLER (TTC) OPERATION GUIDE

### **WARNING**

Do not operate Tactile Touch Controller while driving. Not focusing solely on driving is hazardous and could end in potential serious injury or death. While a vehicle is in motion the driver shall not operate the Tactile Touch Controller.

### **NOTICE**

If the device has been powered on and the screen is off, press the power button once to turn the screen on. Not all features and functions are available across monitor types and code revisions.

### **NOTICE**

Not all features and functions are available across monitor types and code revisions.

### **NOTICE**

Do not pair the Adapter in the settings page as the module will be paired and the APP will not be able to find the device. All pairing is done automatically within the Application.

### 4.1 STARTING UP THE APP

- Turn on device
- If Bluetooth is not on, swipe bar down and press Bluetooth Logo on the settings screen to turn it on.



Figure 4.1a

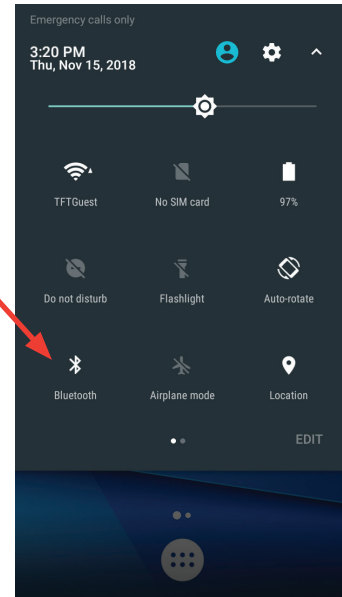


Figure 4.1b

- When the device has fully booted, the user will see a screen which shows the TFT controller APP listed. Figure 4.1d.
- Tap the TFT icon to open the Application.



Figure 4.1c

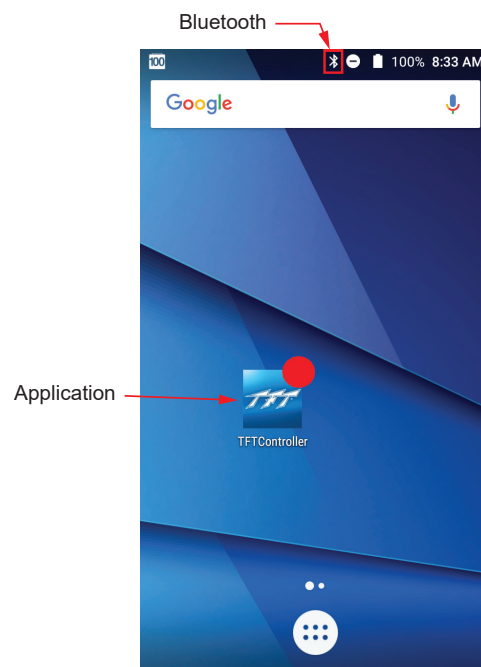


Figure 4.1d

## 4.2 STANDARD FEATURES

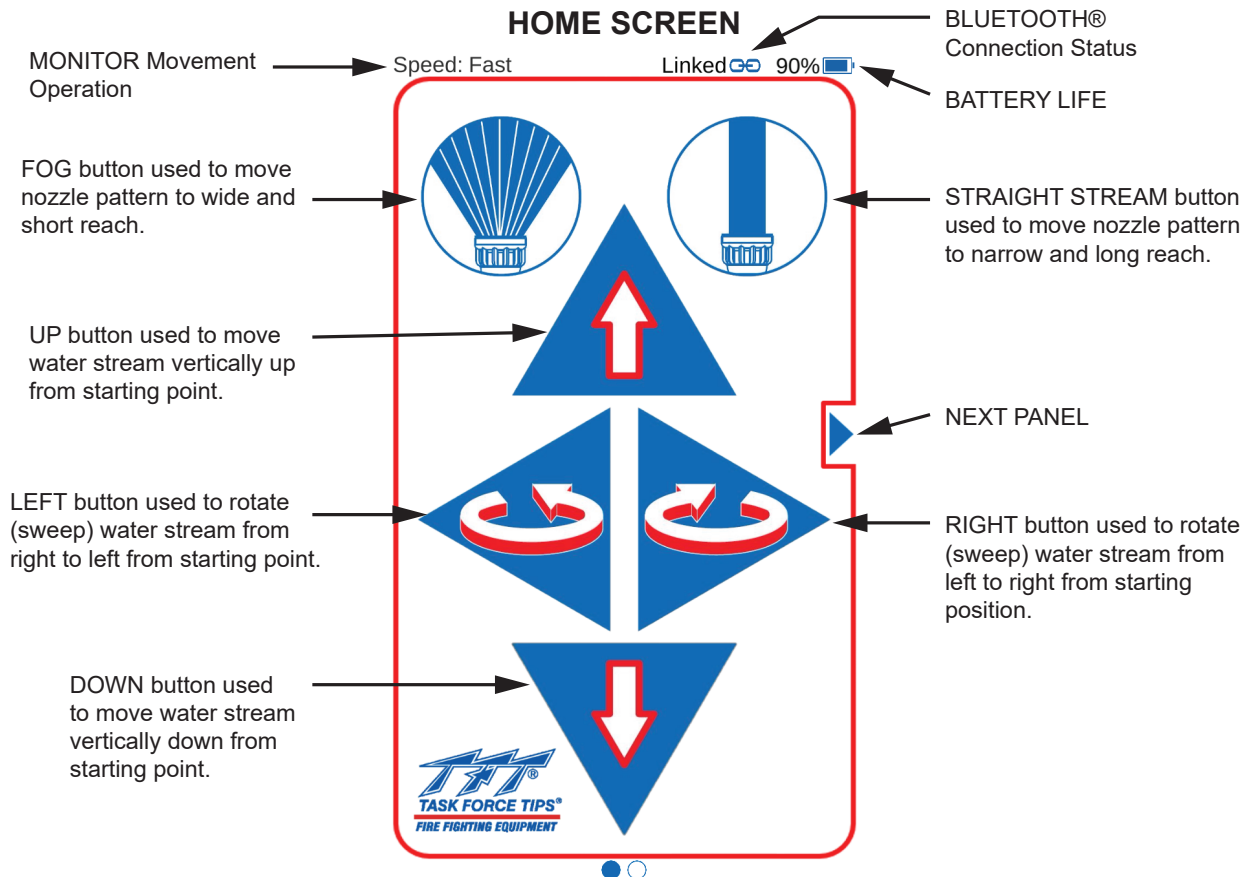


Figure 4.2a

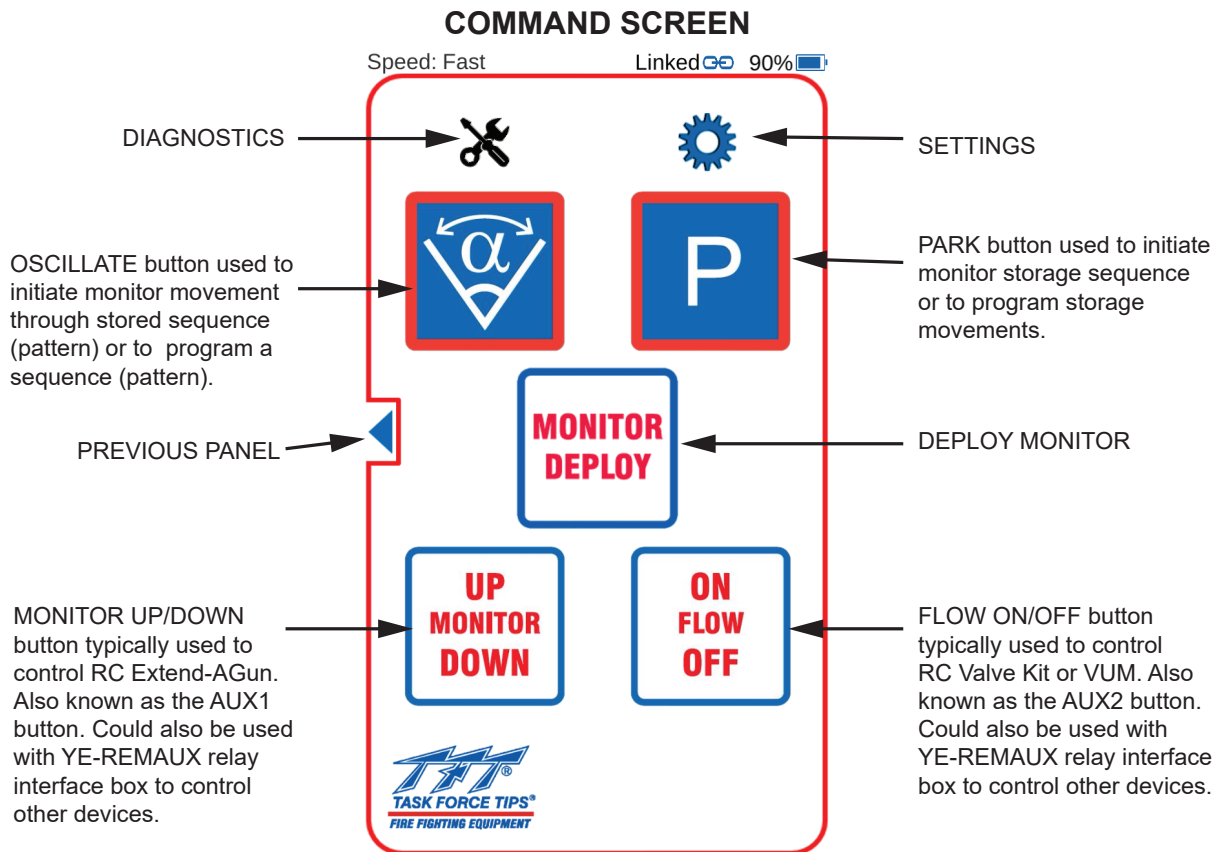


Figure 4.2b

### 4.3 OSCILLATE

The OSCILLATE feature allows the user to program a repeating pattern to control the horizontal and vertical axes of the monitor. Pressing any other button will stop the OSCILLATE pattern. The OSCILLATE pattern needs to be programmed before use. The pattern will be cleared each time power is cycled to the monitor. For fixed monitors, the monitor may be configured to store the program permanently. See Section 7.3.

- Press next panel button to display command screen.



Figure 4.3a

- Press OSC button to perform OSCILLATE pattern.
- OSCILLATION is cancelled by pressing the OSC or any HOME SCREEN movement button.
- Hold button for 5 seconds to enter oscillate pattern programming mode.



Figure 4.3b

- To exit OSC program mode, press the 'Exit Program Mode' button to return to home screen.



Figure 4.3c

#### 4.3.1 PROGRAMMING OSCILLATE PATTERN

**NOTE: WHILE IN PROGRAMMING MODE BACKGROUND IS YELLOW.**

Operate Monitor/Nozzle to position

Press store position button once for each position in pattern

Repeat until pattern is complete (up to monitor's program limit)



Figure 4.2.1a

Press Exit Program Mode button to save pattern and return to home screen



Figure 4.2.1b

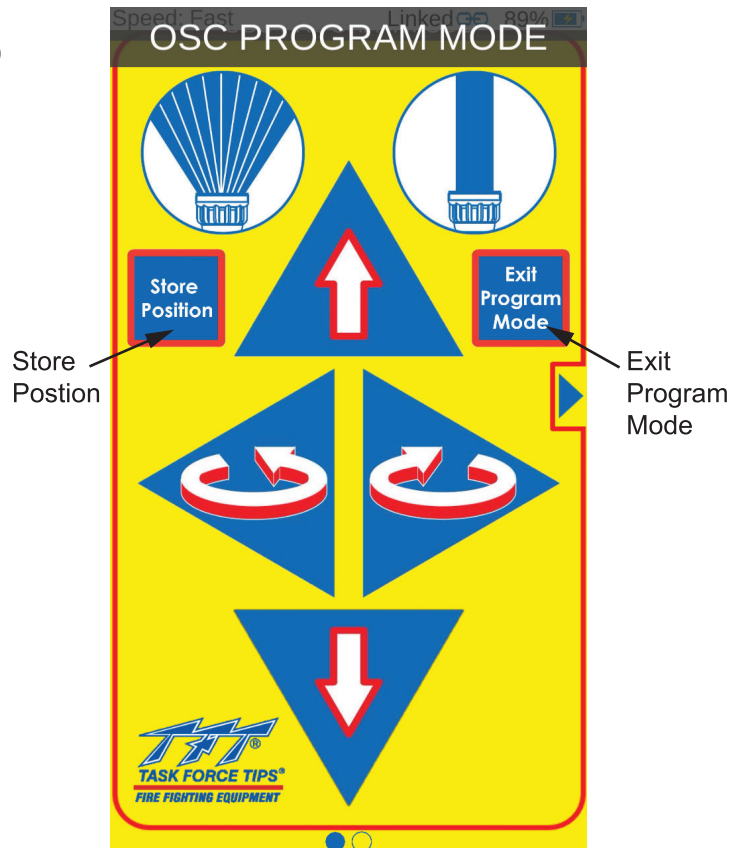


Figure 4.3.1c

## 4.4 PARK

PARK is the position where a TFT monitor/nozzle will home to.

The PARK position needs to be programmed during installation. When programming, the first two commands teach the monitor where to find the hard stops. This guarantees that the position is accurate. From that point, the programmer can program the move to the final PARK position. During normal operation, each time the PARK button is pressed, the monitor moves the nozzle to the full straight stream position, moves to each programmed hard stop, and then moves to the PARK position. While the monitor is performing the PARK routine, pressing any button will stop the monitor.

**RECOMMENDED PARK POSITION:** For truck mounted applications, it is recommended that the monitor be parked in a position such that the monitor's nozzle rests against a bracket or support surface. This will minimize bouncing of the nozzle when the apparatus is traveling. Always be sure the monitor is properly parked before moving the truck. Know the overall height to avoid damage from overhead obstructions such as doors or bridges.

Press button to move to park position



Figure 4.4

### 4.4.1 PROGRAMMING PARK POSITION

**PARK PROGRAMMING MUST BE INITIATED WITHIN 1 MINUTE OF APPLYING POWER TO MONITOR.**

After 1 minute, programming access is blocked. Power must then be cycled to reset 1 minute timer.

Press and hold PARK button (~10 seconds) until light blinks. Release button.

#### FIRST AXIS TO MOVE:

Press and release LEFT/RIGHT or UP/DOWN button of axis that will move to first hard stop.

#### SECOND AXIS TO MOVE:

Press and release LEFT/RIGHT or UP/DOWN button of axis that will move to second hard stop. Second Axis must be different than first Axis.

#### MOVE TO PARK POSITION:

Press and hold the LEFT/RIGHT or UP/DOWN buttons to move monitor to first point of park routine, press and release Store Position button.

Repeat until pattern is complete (up to 10 points).

Note: Both axis can be moved together to reach a point.

Press Store Position Button.

Press Exit Program Mode button to save pattern and return to home screen

Operate Monitor/Nozzle to position

Press button to store position

Press to save park position and return to home screen

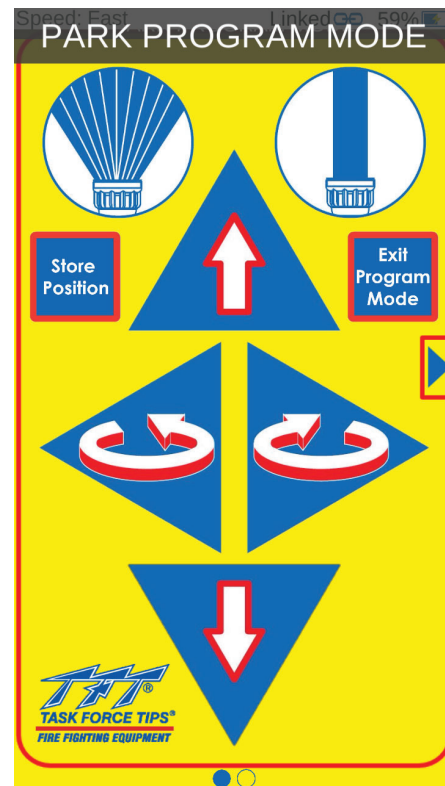


Figure 4.4.1

### 4.4.2 SELECTING NOZZLE DIRECTION DURING PARK

By default, the nozzle will move to the full straight stream position.

To select nozzle movement to the full fog position during PARK pattern, do the following:

- Enter PARK programming mode as indicated in section 4.4.1
- Once PARK Program Mode indicator is flashing, Press FOG button for 1 second and release.
- Continue with PARK pattern programming as outlined in section 4.4.1

To change back to the full straight stream position during PARK pattern, do the following:

- Enter PARK programming mode as indicated in section 4.4.1
- Once PARK Program Mode indicator is flashing, Press STRAIGHT STREAM button for 1 second and release.
- Continue with PARK pattern programming as outlined in section 4.4.1

To exit PARK program mode, press the 'Exit Program Mode' button and the monitor will exit PARK program mode. The user will then be taken to the main controller screen where the user can begin the PARK routine or resume normal operations.



Figure 4.4.2



## 4.5 SYSTEM INFORMATION & QUICK ACCESS PROGRAMMING

Quick access controls are optional shortcuts to operations that exist on other panels but are executed without holding buttons down. All quick access controls are available through the settings button located in section 4.1.

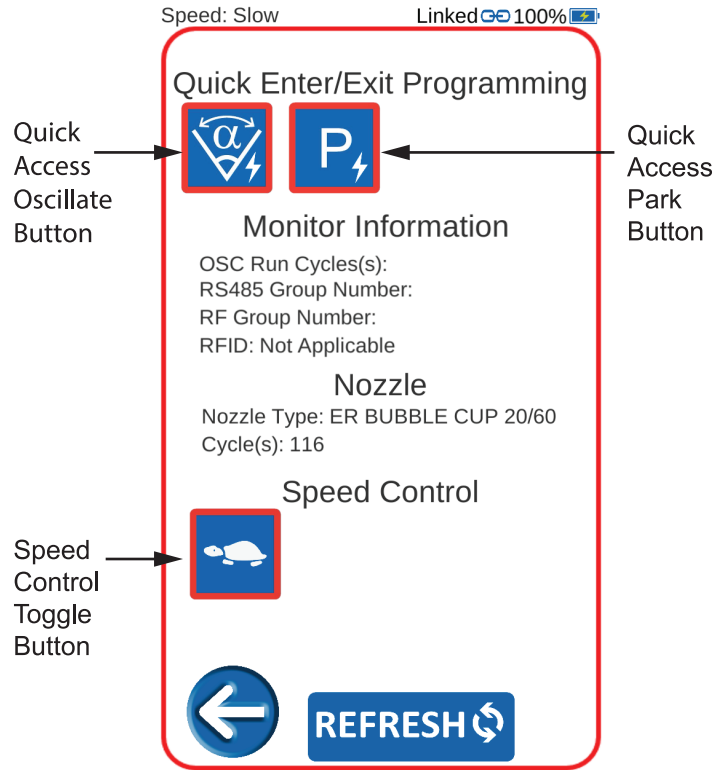


Figure 4.5

### 4.5.1 QUICK ACCESS OSCILLATE

- Press button to enter oscillate pattern programming mode
- Follow steps from 4.2.1



Figure 4.5.1

### 4.5.2 QUICK ACCESS PARK

- Press button to enter park programming mode
- Follow steps from 4.3.1



figure 4.5.2

### 4.5.3 MOTOR INFORMATION

The OSC Run Cycle(s) information display shows the number of times OSC has been initiated.  
The RS485 Group Number information display shows the RS-485 group number the monitor is assigned to.  
The RF Group Number information display shows the RF group number the monitor is assigned to.  
The RFID information display shows the RFID code the communication board is assigned to.

#### 4.5.4 NOZZLE

The Nozzle Type information display shows what type of nozzle the monitor is set to. the options include

- ER Bubble Cup 20/60 GPM
- ER Bubble Cup 20/95 GPM
- Smart Stream
- None / Smooth bore

The Cycle(s) information display shows the cycle counts for an ER nozzle connected to the monitor. This data is collect each time the nozzle hits an end stop see section 7.3 for more information.

#### 4.5.5 MOTOR SPEED

When an operator presses one of the buttons, the associated motor starts in slow speed mode for accurate control of the water stream. For Tornado and EF1 Monitors, after approximately ½ second the motor automatically ramps up to fast speed, for quickly moving into position. For all other monitors, the speed ramps up after 2 seconds. When quickly changing directions, monitor remains at speed of prior move. If slow speed is selected, monitor does not ramp to fast speed but remains in slow speed.

- Press button to toggle in between fast and slow mode

**Note:** By default, motor speed is set to fast speed.

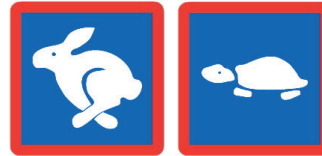


Figure 4.5.5

#### 4.5.6 REFRESH

If monitor information does not update, it may be necessary to press the REFRESH button to ask for the information again. Allow some time for values to update. See figure 4.5.

### 5.0 NOTIFICATIONS

At times, the controller will need to display important system status information. Messages are displayed at the top of the screen in the System Status Area.

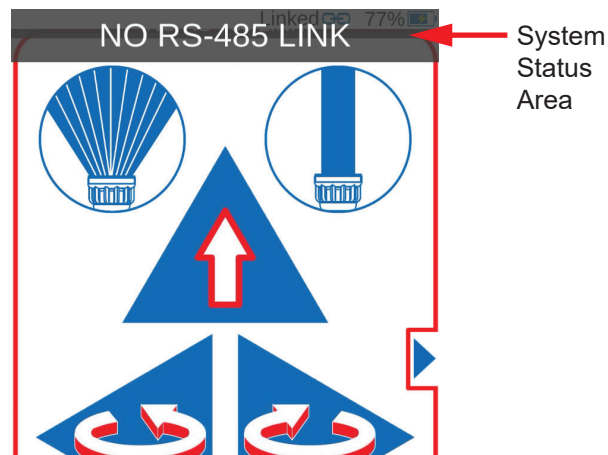


Figure 5.0

#### SYSTEM STATUS AREA NOTIFICATIONS:

- **OSC PROGRAM MODE** – Indicates that the TFT RC monitor is currently in Oscillate Program Mode.
- **OSC RUN MODE** – Indicates that the monitor is currently performing Oscillate pattern.
- **PARK PROGRAM MODE** – Indicates that the monitor is currently in Park Program Mode.
- **PARK RUN MODE** – Indicates that the monitor is currently performing Park Pattern.
- **PARK PROGRAM ENDED** – Indicates that the monitor which is no longer in Park Program Mode.
- **PARK POSITION STORED** – Indicates that the monitor which is in Park Program Mode has successfully stored a new Park position.
- **OSC POSITION STORED** – Indicates that the monitor that is in Oscillate Program Mode has successfully stored a new position.
- **NO RS-485 LINK** – The YE-BT1 board has lost communication to the monitor.

## 5.1 TROUBLESHOOTING

The app is designed to automatically reset its internal Bluetooth adapter if no Bluetooth devices are found, If the automatic reset fails, then turn the Bluetooth OFF and back ON or reboot the controller using the power button.

SYMPTOM	POSSIBLE CAUSE	REMEDY
NO RS-485 LINK message is displayed	Monitor is offline	Verify that the monitor is receiving power
	RS485 wiring malfunction	Confirm that the wiring between the YE-BT1 adapter and the monitor is not disconnected or cut.
Loss of Bluetooth Connectivity	Controller Bluetooth Adapter malfunction	Reset the adapter by going into Settings>Bluetooth and then turning off the Bluetooth. After a few seconds, turn Bluetooth back on.
		Reboot the device by holding the power button down until a menu appears with the option to power off. Power off the device, wait at least 15 seconds, and turn it back on.

## 6.0 ADVANCED SETTINGS

**CAUTION** Changing the settings described in the following sections can result in compromised functionality of the remote and/or monitor. Do not access the options described unless directed by TFT service personnel.

By tapping the TFT Logo at least 10 times in less than 5 seconds, the user can access the Advanced Settings menu. In this screen, the user can access pages for Monitor Diagnostics, Factory Configuration Settings, Operation Settings, and basic Bluetooth settings.

Pressing 'Save & Exit' returns the user to Normal Operation Mode.

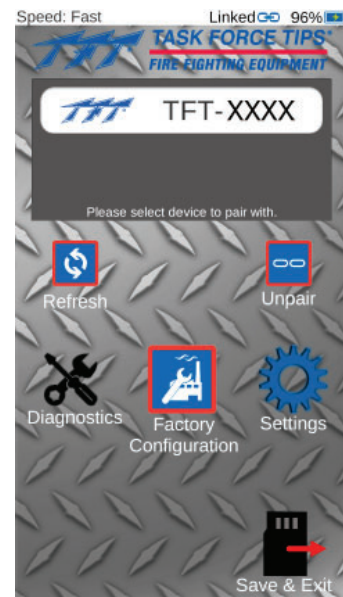


Figure 6.0

## 6.1 CONNECTING TO A NEW OR REPLACEMENT YE-BT1

1. Plug in the YE-BT1 adapter to the existing RS485 and power cable.



Figure 6.1a

2. Within the list of devices in the app there will be an item with a matching Device Name to the purchased YE-BT1 Bluetooth adapter.

**\*Note:** To link to another device first select the unpair button.

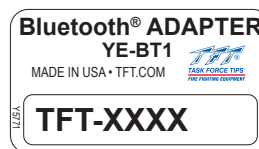


Figure 6.1b

3. Select the device name to complete the process.

4. Press the Save and Exit button to return to the Main Screen.

**\*Note:** Linked icon will appear in the top right portion of the screen if linking has been successful.

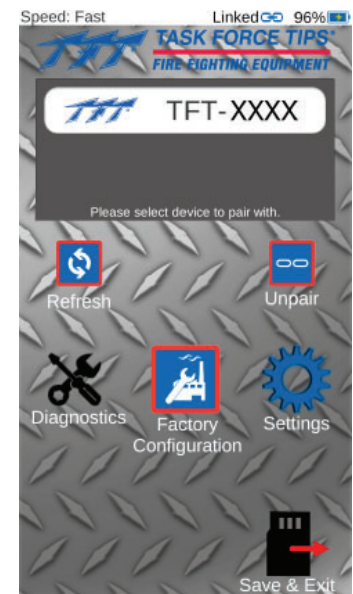


Figure 6.1c



Figure 6.2a

**NOTICE**

Not all features and functions are available across monitor types and code revisions.

This page gives the user axis-specific position data and error messages in order to diagnose issues with the individual motors within the monitor. If any errors are detected, the appropriate error messages will be displayed in a readable text format. Additionally, firmware revisions for the Wireless Touchscreen Controller, YE-BT1 Interface Board, Comm Board, and Motor Board(s) are listed for reference and debugging purposes

- 1 To navigate between the two screens, the user can press either the next/previous screen arrow or swipe to the left or right.
- 2 The back button will return the user to the previous screen.
- 3 Axis position is listed in the form of a percentage from 0-100% of the range of motion.
- 4 Voltage being applied to the monitor is also displayed.

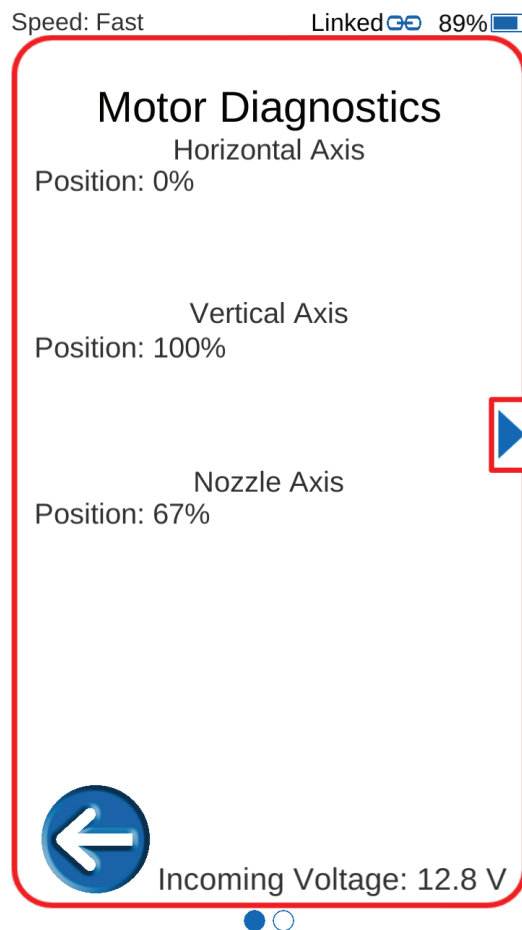


Figure 6.2b

• On page two, the Firmware Revisions heading, there is a list of firmware versions installed on connected devices.

1 – Wireless (Handheld TTC)

2 – YE-BT1 Interface

3 – Communication board

4-6 – Motor board(s)

- EF1 monitors will have only 1 motor board listed
- All other monitors will list three motor boards (one each for horizontal, vertical, or nozzle movements)

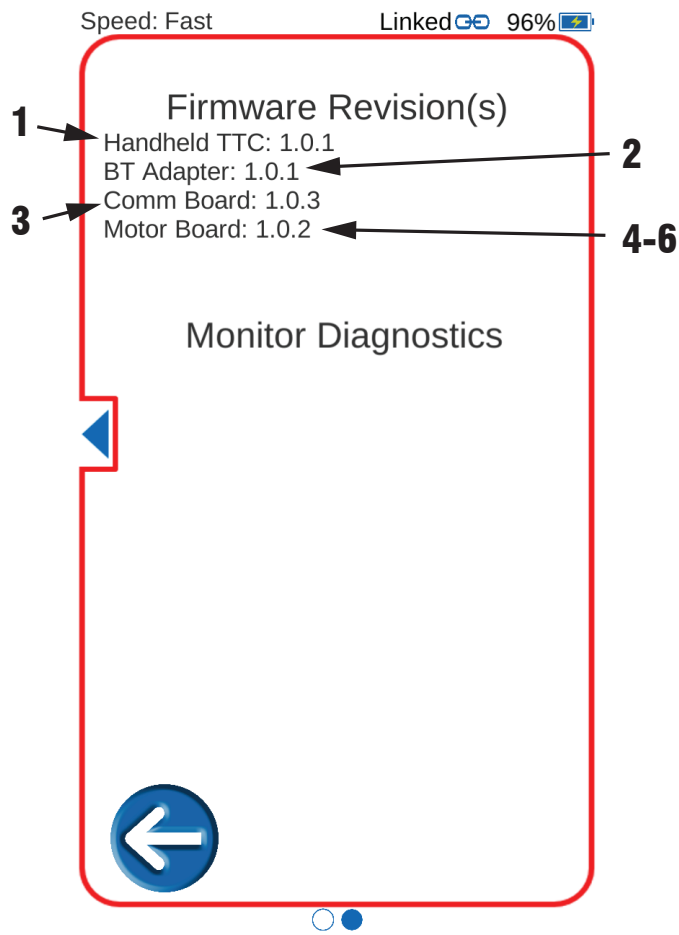


Figure 6.2c

List of Possible Faults/Errors/Messages:

Motor (horizontal, vertical, nozzle) faults or messages:	Monitor Diagnostics faults:
Low Voltage Stop	Horizontal, vertical, nozzle motor limited on low voltage
Encoder Fault	Horizontal, vertical, nozzle encoder fault not reset
Motor Board Status: Not Available	Horizontal, vertical, nozzle motor board reset
Hard Stop Hit Early	Horizontal, vertical, nozzle motor position retention - position not valid
At Reverse Hard Stop	I2C problem
At Forward Hard Stop	Park fault - radio or can module configuration problem. Stuck button on power up - RS485 check fail.

## 6.3 FACTORY CONFIGURATION SETTINGS

(ADVANCED – DO NOT ALTER UNLESS DIRECTED BY TFT SERVICE)



Figure 6.3a

This page lists settings and information generally used only during monitor setup and servicing. On this page, it is possible to edit the monitor's DIP switch settings, find monitor information, toggle KZCO functionality, and lock the ability to store any future park programming movements.

- The back button will return the user to the previous screen.
- The current status of the DIP switches on the comm board is listed on this screen. If the Switch says "OFF" then that specific switch is set to the off position. If the Switch says "ON" then that specific switch is set to the on position.
- To change the current dip switch state without opening the control box, simply press the toggle button for the specific switch that should be changed.
- Below, the DIP switch state options are explained:

The nozzle family is only for EF1 and is controlled by DIP switch 2 which consists of:

- ER Bubble Cup (DIP 2 "ON")
- Standard (Smoothbore, Smart Stream) (DIP 2 "OFF")

The OSC pattern retain setting is controlled by DIP switch 4 being placed in the "ON" position.

To perform a factory reset, toggle DIP 1 "ON".

- After performing a factory reset the monitor will read the DIP switches that are currently set to the "ON" position on the board, not in the app. If those are not set as desired, they can be manually set using either the switches on the board or through the app when it has completed the reset process.
- The monitor types that the system recognizes are:

EF1, Tornado LT, Tornado, Hurricane, Typhoon, Monsoon, Tsunami

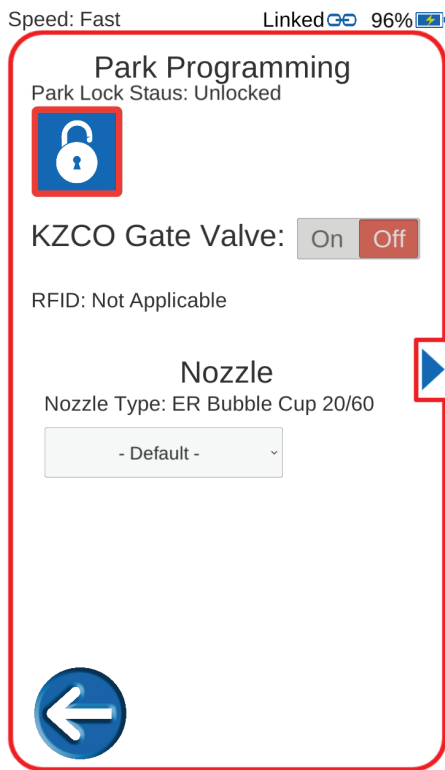


Figure 6.3b

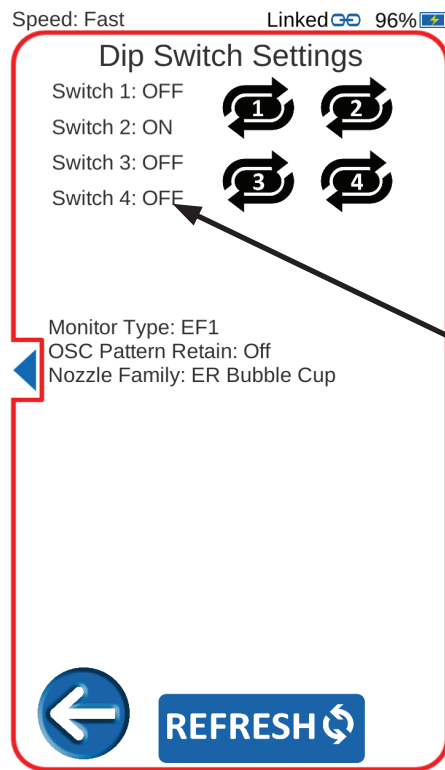


Figure 6.3c

**NOTICE:** These settings may not represent the settings of the physical DIP Switches inside the control box. These settings override the physical switches in the control box.

- If a KZCO Gate valve is connected to the system, then ensure that the virtual switch is in the "ON" position so that the valve gate slider interface is placed on the controller screen.
- PARK programming lock status shows whether or not the PARK program can be overwritten by the user. Press this button to lock the monitor so that a new PARK routine cannot be programmed. Press the button and the monitor will respond back with the change and show it is now locked.
- Additionally it is possible to set the RFID and nozzle type.

## 6.4 OPERATIONAL SETTINGS

- Quick enter buttons allow users to quickly enter the OSC/PARK program modes. (section 4.5)
  - All monitors show OSC Run Cycle(s)
  - For Tornado, Hurricane, Typhoon, Monsoon, Tsunami the RFID, RF Group Number, and RS485 Group number should be displayed.
  - Nozzle type list the type of nozzle on the monitor
    - o ER Bubble Cup 20/60 GPM
    - o ER Bubble Cup 20/95 GPM
    - o Smart Stream
    - o Not Applicable (non or smoothbore)
  - Cycles will be listed in all RC nozzle types
    - o ER Bubble Cup - each time the nozzle is in the shutoff position.
    - o Smart Stream nozzle - when the fog or flush position has hit.
- The speed control allows the user to toggle the monitor speed between fast and slow modes. A rabbit or turtle icon is displayed to show the current speed setting for the monitor. To change the speed, press this button. When the monitor's speed setting changes, the screen will update.

Speed: Fast      Linked  96% 

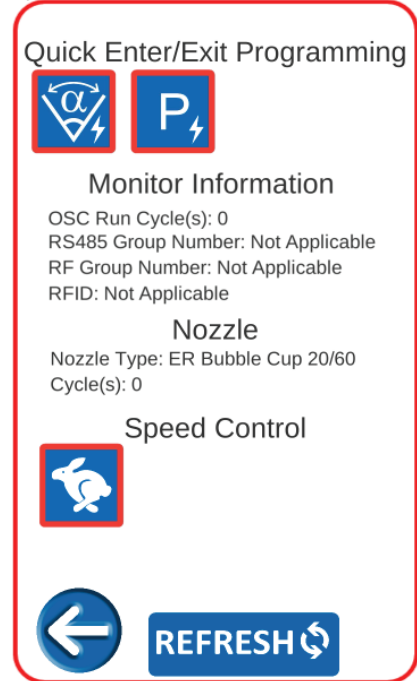


Figure 6.4a



Figure 6.4b

- The back button will return the user to the previous screen

## 7.0 WARRANTY

Task Force Tips LLC, 3701 Innovation Way, Valparaiso, Indiana 46383-9327 USA (“TFT”) warrants to the original purchaser of its Tactile Touchscreen Controller and other equipment (“equipment”), and to anyone to whom it is transferred, that the equipment shall be free from defects in material and workmanship during the five (5) year period from the date of purchase.

TFT’s obligation under this warranty is specifically limited to replacing or repairing the equipment (or its parts) which are shown by TFT’s examination to be in a defective condition attributable to TFT. To qualify for this limited warranty, the claimant must return the equipment to TFT, at 3701 Innovation Way, Valparaiso, Indiana 46383-9327 USA, within a reasonable time after discovery of the defect. TFT will examine the equipment. If TFT determines that there is a defect attributable to it, it will correct the problem within a reasonable time. If the equipment is covered by this limited warranty, TFT will assume the expenses of repair.

If any defect attributable to TFT under this limited warranty cannot be reasonably cured by repair or replacement, TFT may elect to refund the purchase price of the equipment, less reasonable depreciation, in complete discharge of its obligations under this limited warranty. If TFT makes this election, claimant shall return the equipment to TFT free and clear of any liens and encumbrances.

This is a limited warranty. The original purchaser of the equipment, any person to whom it is transferred, and any person who is an intended or unintended beneficiary of the equipment, shall not be entitled to recover from TFT any consequential or incidental damages for injury to person and/or property resulting from any defective equipment manufactured or assembled by TFT. It is agreed and understood that the price stated for the equipment is in part consideration for limiting TFT’s liability. Some states or countries do not allow the exclusion or limitation of incidental or consequential damages, so the above may not apply to you.

TFT shall have no obligation under this limited warranty if the equipment is, or has been, misused or neglected (including failure to provide reasonable maintenance) or if there have been accidents to the equipment or if it has been repaired or altered by someone else.

THIS IS A LIMITED EXPRESS WARRANTY ONLY. TFT EXPRESSLY DISCLAIMS WITH RESPECT TO THE EQUIPMENT ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE. THERE IS NO WARRANTY OF ANY NATURE MADE BY TFT BEYOND THAT STATED IN THE DOCUMENT.

This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

## 8.0 MAINTENANCE

**⚠ WARNING** Any controller found to be malfunctioning is unsafe for use and must have the problem corrected before use or being placed back into service. Operating with a failed controller is a misuse of this equipment.

Physically inspect controller on at least a quarterly basis in order to verify that all functions are operational and that the controls are free from damage and/or corrosion. Check the battery level of the touchscreen controller often and recharge as necessary.

Service test all monitors at least annually to ensure that all controllers are operational. Maintain records of the controller as part of the monitor records.