



FTC Robot Troubleshooting Guide

Symptom		Possible Cause or Remedy
1.	NXT Module will not turn 'ON' when Orange button is pressed. (nothing shows on LCD, no sound)	<ul style="list-style-type: none"> • NXT battery pack is missing. <ul style="list-style-type: none"> ○ Install charged battery pack. • NXT battery pack is dead. <ul style="list-style-type: none"> ○ Replace / Recharge battery pack. • NXT battery is not properly seated in the NXT. • Contact springs in the NXT may be bent out of position or compressed too much. • NXT Firmware is corrupted. <ul style="list-style-type: none"> ○ Press Orange button and listen for a very soft "clicking" sound from the NXT Module. If "clicking", reset the NXT by pressing the small reset button at bottom of the mounting hole below the USB port, for 10 seconds. Reload the NXT firmware and the team's software programs.
2.	Unable to connect to NXT Module via Bluetooth.	<ul style="list-style-type: none"> • NXT is not powered on. • NXT battery is low. • NXT Bluetooth is turned off. • NXT Bluetooth is set to invisible. • Bluetooth dongle is not connected to the computer. • Incorrect NXT name selected in the program attempting to communicate with the NXT. • Bluetooth connection was not properly severed from the previous use. <ul style="list-style-type: none"> ○ Remove the NXT battery for 15 seconds, then reinstall. • NXT is buried behind too much metal, preventing the signal from reaching the controller. • NXT is too close to an active 802.11(a,b,g,or N) WiFi system. <ul style="list-style-type: none"> ○ Turn off the WiFi source or move further away. • See the <i>FIRST</i> NXT Bluetooth Troubleshooting Guide for diagnosing Bluetooth connection problems on a computer running Windows XP.

3.	Robot does not respond to driver commands.	<ul style="list-style-type: none"> ● Verify the correct program is loaded and running on the NXT. ● NXT and/or 12V TETRIX battery is turned off, dead or low. ● Check red mode light on the Logitech Dual Action Controller. <ul style="list-style-type: none"> ○ If 'ON', press mode button to toggle the light off. ● Bluetooth connection with the computer is lost or not established. ● Electrical wiring is loose or disconnected. <ul style="list-style-type: none"> ○ Check the wiring of the battery, HiTechnic Motor and Servo Controllers. ● Check 20A TETRIX battery fuse connected to the battery pack. <ul style="list-style-type: none"> ○ If 'blown', check wire connections and wire insulation for shorts prior to replacing the fuse.
4.	Robot runs, but does not behave as expected. Some functions may work and others do not.	<ul style="list-style-type: none"> ● NXT battery pack or 12V TETRIX battery may have low voltage. ● Verify all software is current and all updates have been applied. <ul style="list-style-type: none"> ○ Check HERE for Software / Updates / Templates. ● Check robot programming. ● Verify the correct program is loaded and running on the NXT. ● Verify the Logitech Dual Action Game Controller is connected to the computer and properly selected in the application running on the computer (ROBOTC, FTC Controller Station, FMS). ● Check the Red mode light on the Logitech Dual Action Game Controller. <ul style="list-style-type: none"> ○ If 'ON', press mode button to toggle the light off. ● Wires to the DC motor terminals may be loose or disconnected. ● Wires connected to the HiTechnic controllers may be loose or disconnected.
5.	Motor or servo performance degrades rapidly or stops working during use.	<ul style="list-style-type: none"> ● 12V TETRIX battery may be low. ● Check for loose power connections. ● Check Servo motors, Gears, and DC motors for freedom of movement / excessive heat. <ul style="list-style-type: none"> ○ Clear obstructions, change gearing, add motors or reduce physical load on motor.
5.	NXT will not turn on, display is blank.	<ul style="list-style-type: none"> ● NXT battery is dead or low. ● Place the NXT close to your ear and listen for a very soft "click of death." Reset the NXT by pressing the small reset button underneath the NXT below the USB port, for 10 seconds. Reload the NXT firmware and the team's software programs.