



Robot Reliability Checklist

Make sure your Robot is ready for Competition Day!



No.	Task	Subtask	Check if Completed	Notes
1 Wireless Configuration				
	a	Verify that the Wi-Fi name of the Robot Controller (RC) complies with rule <RS01> and that the name does not have any newline or other non-alphanumeric characters embedded.		Name should consist of the team number, a hyphen and "RC". If you have more than one RC, you can insert a letter followed by a hyphen in between the "-" and "RC". For example, "1234-RC", "1234-A-RC", and "1234-B-RC" are all valid names. Name should not have any non-alphanumeric characters (other than the hyphen "-").
	b	Verify that the Wi-Fi name of the Driver Station (DS) complies with rule <RS01> and that the name does not have any newline or other non-alphanumeric characters embedded.		Name should consist of the team number, a hyphen and "DS". If you have more than one DS, you can insert a letter followed by a hyphen in between the "-" and "DS". For example, "1234-DS", "1234-A-DS", and "1234-B-DS" are all valid names. Name should not have any non-alphanumeric characters (other than the hyphen "-").
	c	For an Android RC or DC phone - Verify that Airplane Mode is turned on with Wi-Fi enabled and Bluetooth turned off.		You can also turn off the GPS location tracking to reduce the power drain on the battery.
	d	For the REV Driver Hub - Verify that Wi-Fi is enabled and Bluetooth is turned off.		You can also turn off the Android phone GPS location tracking to reduce the power drain on the battery.
	e	Forget all Wi-Fi networks on the RC Android phone.		The RC should only be connected to the DS.
	f	Forget all Wi-Fi networks on the DS Android phone or Driver Hub.		The DS should only be connected to the RC.
2 Software Configuration				
	a	Verify that the version number of the FTC Driver Station app matches the version number of the FTC Robot Controller app. The minimum version number is 8.0.		Connect the DS and RC over Wi-Fi and use the DS "Self Inspection" feature to get app version information for both the DS and RC.
	b	For Android phones - Verify that the DS app is not installed on the same phone as the RC app. Each phone should only have one or the other app installed (not both).		Having the RC app on the same phone as the DS app can have a bad effect on reliable Wi-Fi operation.
	c	Verify that there is only one RC app installed on the Robot Controller device.		
	d	For an Android Phone Robot Controller - Verify that the RC app is the default app that is associated with Expansion Hub.		
3 Driver Station (DS)				
	a	For a smartphone - Check the USB connections between the gamepads, the USB hub, the Micro USB OTG adapter, and the Android phone to make sure they are secure.		
	b	Make sure the Logitech F310 gamepads are set to "X" mode (Xbox emulation mode).		There is a switch on the bottom of the F310 gamepad. Make sure it is pushed to the "X" position.
	c	Make sure the Logitech F310 gamepad "mode" button is not enabled (LED will illuminate when enabled), unless you TRULY want to map the D-pad to the Left Analog Joystick (and vice versa).		The "mode" button on the F310 joystick is the most commonly activated button by accident, and it remaps the DPAD to the left analog stick while enabled.
	d	Make sure to press START and A or START and B to designate a gamepad as driver #1 or driver #2.		

	e		Verify that the DS phone or REV Driver Hub is not obscured by any metal that could block its radio transmissions with the Robot Controller.		
4 Robot & Robot Controller (RC) Checks					
	a		Verify that all USB connections are properly secured and strain relieved so they will not vibrate or shake loose during a match! (EXTREMELY IMPORTANT)		The USB cables should be secured so that the ends of the connectors do not vibrate, shake or jolt loose. Even a slight wiggle of the connector can cause a USB disconnect. For more information, review the Robot Wiring Guide
	b		Verify that the phone and electronic modules are properly secured so they will not vibrate or shake loose during a match! (EXTREMELY IMPORTANT)		The phone and electronic modules should be properly secured so they will not vibrate, shake or jolt loose.
	c		Verify that the phone, electronic modules and USB connections are safe from impact due to a collision or a fall. (EXTREMELY IMPORTANT)		
	d		Whenever you need to turn off your robot, make sure you keep it off for a recommend <u>5 seconds</u> before powering it back on! (EXTREMELY IMPORTANT)		
	e		Verify that the RC phone or Control Hub is not obscured by any metal that could block its wi-fi radio transmissions with the Driver Station.		
5 Battery and Power					
	a		Check the battery level on the Robot Controller (RC) Android phone.		
	b		Check the battery level of the Driver Station (DS) Android phone or REV Driver Hub.		Rule <DS05> allows a commercial off the shelf USB external battery connected to the Driver Station USB hub to charge the Android phone during match play, or directly connected to the REV Driver Hub via USB-C. Use a 2.0 A or greater power source for the REV Driver Hub.
	c		Make sure your 12V robot battery has a decent charge. Ideally the no-load voltage should be at least higher than 12.0V (closer to 13V or higher is preferable).		A battery load tester is the preferred method for determining battery health. The Battery Beak tester by Cross the Road Electronics is a staple of FTC team toolkits.
	d		Never let your no-load battery voltage fall below 9V or it can become permanently damaged.		For more information, https://www.revrobotics.com/rev-31-1302/
	e		Remember, a large number of DC motors can drain your battery quickly. For example, a robot with 8 DC motors under a heavy load can drain a 3000 mAh battery within 5 to 10 minutes. Each DC motor can draw 2 to 4A of current under normal to heavy loads.		
	f		Verify that the battery is properly secured so that it is safe from impact due to a collision or a fall and that it will not shake loose or fall out during a match! (EXTREMELY IMPORTANT)		
	g		Ensure that your Main Power Switch is properly labeled (as per <RE01>) and positioned so that a collision (with another robot, the field border wall, etc.) will not inadvertently power off the robot.		