Robot Reliability Checklist

Make sure your Robot is ready for Competition Day!

No.	Task	Sub Task	Check if Completed	Notes
1	**Wireless Configuration**			
	a	Verify that the Wi-Fi Direct name of the Robot Controller (RC) complies with rule <RS02> 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 Direct name of the Driver Station (DS) complies with rule <RS02> 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	Verify that the RC has Airplane Mode turned on with Wi-Fi enabled and Bluetooth turned off.		You can also turn off the GPS to save battery if you are not using it.
	d	Verify that the DS has Airplane Mode turned on with Wi-Fi enabled and Bluetooth turned off.		You can also turn off the GPS to save battery if you are not using it.
	e	Forget all Wi-Fi networks on the RC phone.		The RC should only be connected to the DS.
	f	Forget all Wi-Fi networks on the DS phone.		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.		Look in the "About" menu of the apps to get version information.
	b	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 Direct operation.
	c	Verify that there is only one RC app installed on the RC Android device.		This is especially important for teams who use the MIT App Inventor.
	d	Verify that the RC app is the default app that is associated with the Modern Robotics modules installed on the robot.		For more information, refer to the Intelitek FTC training module (see http://ftc.edu.intelitek.com/) Module 1: Hardware and Control System Connections, Chapter 3. FTC Android Device Apps, page 5 of 23.
	e	For ZTE Speed phones only, verify that the ZTE Speed Channel Changing app is installed on the RC phone.		The ZTE Channel Changing app is available from Google Play (see https://play.google.com/store/apps/details?id=com.zte.wifichanneleditor&hl=en)
3	**Driver Station (DS)**			
	a	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 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 is not obscured by any metal that could block its radio transmissions.		

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.
	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 35 seconds before powering it back on! (**EXTREMELY IMPORTANT**)		The electronic modules have large capacitors onboard that smooth out the input power to the devices' micro controllers. These capacitors need sufficient time to discharge, if they do not fully discharge, the micro controllers might be left in a semi-powered state and not boot properly when the power is turned back on.
	e		Verify that the RC phone is not obscured by any metal that could block its radio transmissions.		
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.		
	c		Make sure your 12V robot battery has a decent charge. Ideally the voltage should be at least higher than 12.0V (closer to 13V or higher is preferable).		
	d		Never let your battery voltage fall below 10V or it can become permanently damaged.		
	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.		