

2012 FRC Control System Checklist

1. Set Up Driver Station

1.1. Re-image Classmates

- Power off, insert “2012 image” USB Drive, Power on, tap F11 key to enter boot menu, select “Generic Flash Disk”, press Enter, Confirm: [press “1” and Enter, press “Y” and Enter], wait until complete, remove USB Drive, Restart.

2. Install Programming Software

2.1. Turn off virus protection software

2.2. Select Programming Language

- ❖ Some National Instrument Software is needed for all languages.
- Install Software
 - Labview (requires 3.91GB), Serial Number: **S14X86759**,
 - WindRiver (requires 2.4GB), or
 - Java (requires a minimum 350MB).

3. Set Up Robot Control System

3.1. Confirm LED Status Lights on all Components

4. Configure CompactRIO

4.1. Set IP address, Image CompactRIO using Imaging Tool

4.2. Build, Load and Test Default Code

5. Configure Wireless Bridge

5.1. Connect to Computer using an Ethernet Cable

5.2. Set Computer’s IP to: **192.168.0.51** and subnet mask to: **255.0.0.0**

5.3. Using Internet Explorer, browse to: **192.168.0.50**

5.4. Username = “admin”, leave password blank

5.5. Select: “Manual Wireless Network Setup”

- 5.6. Change Wireless Network Name to your team number.
- 5.7. Select 2.4 GHz for the 802.11 Band
- 5.8. Change Security Mode to: “WPA-Personal”
- 5.9. Change WPA Mode to: “WPA2 Only”
- 5.10. Change the Cipher Type to “AES”
- 5.11. Enter a Passphrase like: “xyyyWPAKEY”
- 5.12. Ensure Wi-Fi Protected Setup is disabled
- 5.13. Save settings
- 5.14. Select Network Settings
- 5.15. Set the IP address to: **10.xx.yy.1** and subnet mask to:
255.0.0.0
- 5.16. Set the Default Gateway to **10.xx.yy.4**
- 5.17. Save settings

6. Configure Camera

- 6.1. Perform Set Up Using Direct Connection with Computer
 - Set PC’s IP address to 192.168.0.6
 - Using Internet Explorer, browse to: **192.168.0.90**
 - Log into the root account (password = “pass”)
 - Launch “Setup Axis Camera”, or manually configure
 - Setup user accounts: root with password = “admin” and FRC with password = “FRC”
 - Change Camera IP to: **10.xx.yy.11**
 - Save settings
- 6.2. Connect to Control System and Test Operation

7. Configure I/O Module

- 7.1. Log into the Developer Account
- 7.2. Plug USB cable into the I/O Module and the Classmate

- 7.3. Open the Cypress PsoC Programmer
- 7.4. Click the Blue folder and select the correct firmware for your Module (e.g. **FRC_IO.v3.hex**)
- 7.5. Select the device in the Port window
- 7.6. Click the program button and wait until complete
- 7.7. Unplug/Plug in the I/O Module to reboot
- 7.8. A successful process can be checked by opening the Driver Station and confirming the device is being recognized

8. Configure Kinect

- 8.1. Install the “32 bit download” software from the Jumpstart USB Drive, or download from:
<http://kinectforwindows.org/download>
- 8.2. Install the FRC Kinect Server from the Jumpstart USB Drive, or download from: <http://www.usfirst.org/frc/kinect>
- 8.3. Open the Driver Station and confirm the Kinect is connected by clicking on the Diagnostics tab. The Kinect LED should be green and version number should be:
01.07.12.00