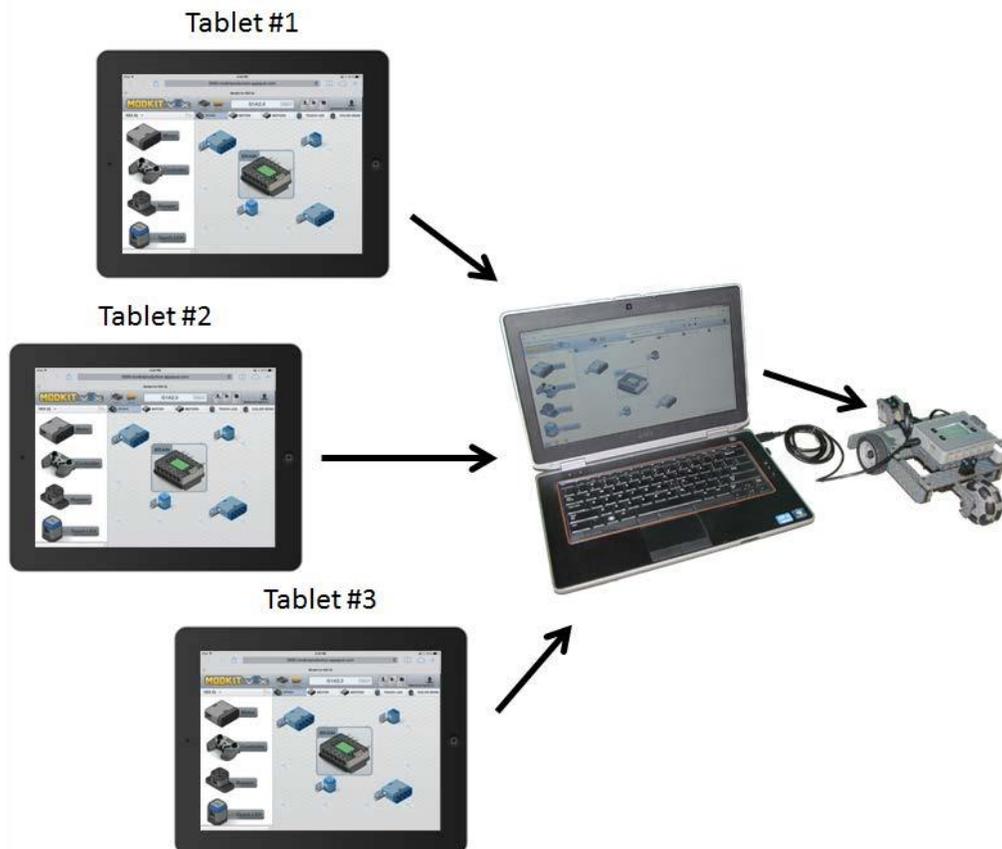# Robotics and Automation: Challenge Modkit
Initial Setup for the Native iPad® App
Updated: 11/16/2016

Introduction

A Modkit™ project can be transferred wirelessly from a tablet to a VEX IQ® brain attached to a classroom computer. Each classroom computer can be uniquely identified to allow multiple download points within the same network. The procedure below is used to install the required software and establish communication between the tablet, classroom computer, and VEX IQ® brain.

The Modkit for VEX® iPad tablet app differs from the Safari app used during Core Training and PLTW Launch in fall 2014. Projects are saved on the tablet instead of in a Google or Yahoo account. Cloud storage is not currently an option, so sign-in is not available. The iPad tablet app supports connections to multiple brains provided that each is connected to a unique computer.

Equipment
- VEX IQ® kit
- iPad® tablet
- Classroom computer

Procedure A. VEX IQ® Firmware Update

Frequency: Initial Setup and Periodic Update
Device: Computer (PC or Mac)

Use this section to maintain full functionality for your VEX IQ® brain, controller, and all other sensors. To review the process for updating firmware, please refer to the "Using VEX IQ®" section of the Robotics and Automation Core Training. This section requires a computer with administrative rights.

1. Open an Internet browser on a computer and navigate to the Microsoft Windows based software http://www.vexrobotics.com/vexiq/software/vexos
2. It is recommended to sign up for VEX IQ® software update notifications using the feature shown on the site.
3. Follow the instructions shown on the page to download, install, and run the updater.
4. After components are updated, close the VEXos® Utility. **This must be closed prior to using Modkit Link.**

B. Bonjour Installation
Frequency: Initial Setup
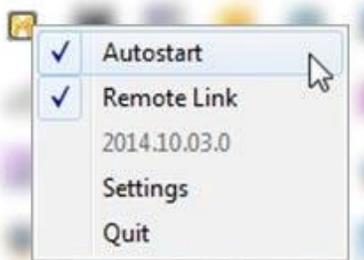### Device: Classroom PC (This is pre-installed on a Mac)

1. Download and install Bonjour on a PC from http://support.apple.com/kb/DL999 The Bonjour software should run each time the computer is started. Note that this software was originally designed for printer connectivity.

C. Modkit Link Installation
Frequency: Initial Setup and Periodic Update Device: Computer (PC or Mac)

Use this section to install software to download a Modkit project from a **computer** to a VEX IQ® brain.

1. Connect a classroom computer to the same network either wirelessly or through an Internet cable as the iPad.
2. If VEXos Utility is open, exit the software. This software must be closed prior to using Modkit Link.
3. Open an Internet browser on the computer. Navigate to http://modkit.com/link and download the appropriate installation software based on the computer and download the file.
4. Install Modkit Link. This will overwrite any previous version of the software.
5. Open Modkit Link on a computer. You should see the Modkit Link icon in the system tray.
6. Right click the Modkit Link icon in system tray, and select Remote Link. Check that the Enable Autostart has a check mark by it as shown below. This will ensure that Modkit Link opens each time the computer starts. Note that the Modkit Link software version is indicated as a date code beneath the Remote Link option as shown.
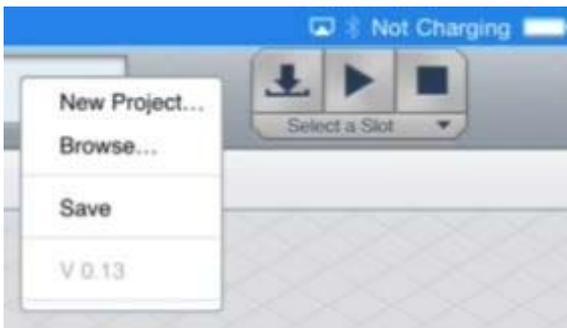

D. Modkit App Installation
Frequency: Initial Setup
Device: Computer (PC or Mac)

Note: It is important that students work on the same tablet each time they use Modkit for VEX® IQ because all of the projects stay on that tablet. Projects cannot be transferred from one tablet to another.

1. Install the PLTW Launch Robotics App (Modkit for VEX® IQ) on iPad using either a computer or an iPad.
    a. Using the computer:

        i. Connect iPad to computer.
        ii. Open iTunes.
        iii. Open iTunes Store.
        iv. Search using the term Modkit.
        v. Install Modkit for VEX® IQ.
        vi. Disconnect the iPad from computer.

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      b. Using the iPad:

         i.   Open the App Store.
         ii.   Search using the term Modkit.
         iii.   Select and install.

2. Confirm that the latest version of Modkit for VEX® IQ is installed. Select the project dropdown and verify that the version shown at the bottom of the list (see image shown below) matches the latest version available at the iTunes store: https://itunes.apple.com/us/app/pltw-launch-robotics-software/id905100697

3. Confirm that Modkit Link is running as indicated by a yellow M present in the system tray.
4. Click the Modkit Link icon in the system tray and verify that Autostart and Remote Link are enabled as indicated by a check mark.

5. Power off the VEX IQ® brain
6. Connect the VEX IQ® brain to a computer using a USB cable.
7. Power up the brain by selecting the check mark on the brain.
8. Wait for the USB drivers to finish an automatic installation. If the brain was already attached to this port, the drivers should have already have been installed.
9. On the iPad tablet a pop up indicating that a VEX IQ® brain is connected will appear briefly on the tablet. This indicates that a link is established between iPad and Modkit Link software on computer. The connection can be verified and reestablished at any time though the VEX IQ® drop down menu as shown. This is crucial for providing the functionality to download to multiple brains provided that each one is connected to a different computer.

10. Create a program and save it or download it to the VEX IQ® brain. Projects are saved on the tablet instead of in a google or yahoo account. Cloud storage is not currently an option, so sign-in is not available.
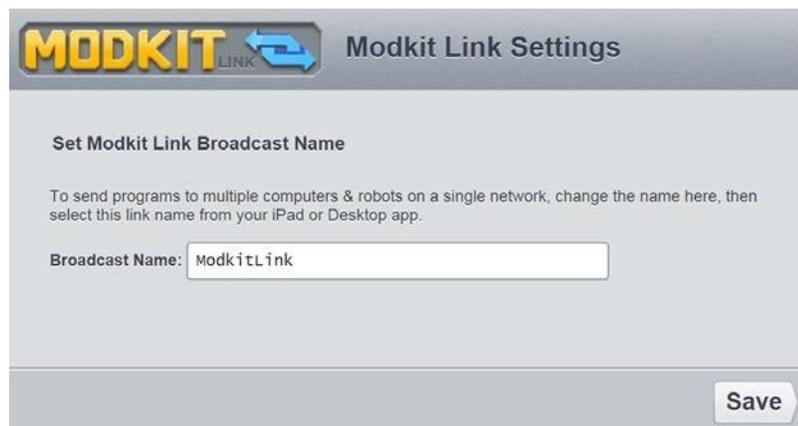   a. Save

        i. Name the project.
        ii. Use drop down to save.
    b. Download

        i. On computer

            1. Click Modkit Link icon in system tray, right click, and select Remote Link.
            2. Select Settings on the Modkit Link icon. This will open an Internet browser page.
            3. Change the Broadcast Name to distinguish the computer to which the brain is attached.
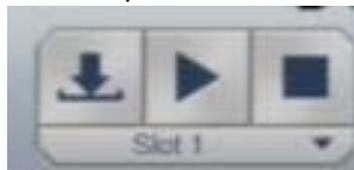

            4. If another brain is attached to another computer on the same network, follow the above procedure and use a unique broadcast name for each computer.
        ii. On iPad

1. Select the VEX IQ$^{®}$ drop down and then select the Modkit Link that identifies the appropriate brain. Confirm that the Modkit Link is connected as indicated by the arrows and Connected On COM message as shown below.

2. Select the appropriate slot and select download or play based on the action required.

E. Subsequent Connection of VEX IQ$^{®}$
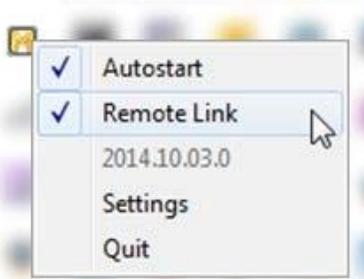## Frequency: Ongoing
Device: Computer (PC or Mac)

Use this section to connect a **computer** to a VEX IQ$^{®}$ brain after Modkit Link is installed and confirmed to be functioning correctly.

Note: It is important that students work on the same tablet each time they use Modkit for VEX$^{®}$ IQ because all of the projects stay on that tablet. Projects cannot be transferred from one tablet to another.

1. Confirm that Modkit Link is running as indicated by a yellow M present in the system tray.
2. Click the Modkit Link icon in the system tray and verify that Autostart and Remote Link are enabled as indicated by a check mark.

3. Power off the VEX IQ® brain.
4. Connect the VEX IQ® brain to a computer using a USB cable.
5. Power up the brain by pressing the check mark on the brain.
6. Start Modkit for VEX app on iPad.
7. A pop up indicating that a VEX IQ® brain is connected will appear briefly on the tablet. This indicates that a link is established between iPad and Modkit Link software on the computer. The connection can be verified and reestablished at any time though the VEX IQ® drop down as shown. This is crucial for providing the functionality to download to multiple brains provided that each one is connected to a different computer.
8. Create a program and save it or download it to the VEX IQ® brain. Projects are saved on the tablet instead of in a google or yahoo account. Cloud storage is not currently an option, so sign-in is not available.
    c. Saving:
        i. Name the project.
        ii. Use dropdown menu to save.
    d. Download:
        i. On computer:

            1. Click Modkit link icon in system tray, right click, and select Remote Link.
            2. Select Settings on the Modkit Link icon which will open an Internet browser page.
            3. Change the Broadcast Name to distinguish the computer to which the brain is attached.

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4. If another brain is attached to another computer on the same network, follow the above procedure and use a unique broadcast name for each computer.

ii. On iPad

1. Select the VEX IQ® drop down and select the Modkit Link which identifies the appropriate brain. Confirm that the Modkit Link is connected as indicated by the arrows and Connected On COM message as shown below.

2. Select the appropriate slot and select download or play based on the action required.