

Using easyC for Autonomous Competition Robots

1. Install or Upgrade easyC version 2
2. Update Vex controller to Master Code to Version 7
3. Open the "easyC Autonomous Template 20-120.ECT" Competition Template
4. Begin Programming

Note: Placing a jumper in interrupt 5 will run only autonomous code. Placing a jumper in interrupt 6 will run only operator controlled code. During the competition, no jumper is required.

Upgrading easyC to Version 2

EasyC version 2 is an upgrade to version 1.1, which is included with the RadioShackVex Programming Kit (#276-2152), which can now be purchase at www.vexlabs.com. A copy of easyC V1.1 must be installed before the version 2 upgrade can be installed. A trial version of easyC Version 2 can be downloaded from <http://www.intelitekdownloads.com/easyCV2/> (Note: this address is case-sensitive!)

Using easyC V2

EasyC V2 has many of new features that will enhance your programming experience. All the new features are outlined in the easyC help file. Six new advanced tutorials have also been added to the Getting Started portion of the help file. These tutorials show students examples of how some of the new easyC features can be used. If you complete the tutorials you will gain a basic understanding of:

- Line Following
- User Functions
- Global Variables and Constants
- Libraries
- Competition Templates

There are also several new sample project included with the V2 upgrade to show how some of the new features can be used. Please refer to the help file first for all your questions. If you need further assistance, please email us your questions to support@intelitek.com.

Troubleshooting - A common problem is related to the settings in the Vex transmitter. Please verify that the Drive option in the transmitter is set to 23 mode whenever you are using an RX command in your easyC project!

Competition Templates

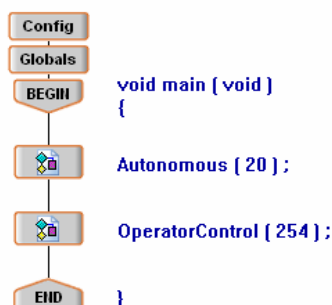
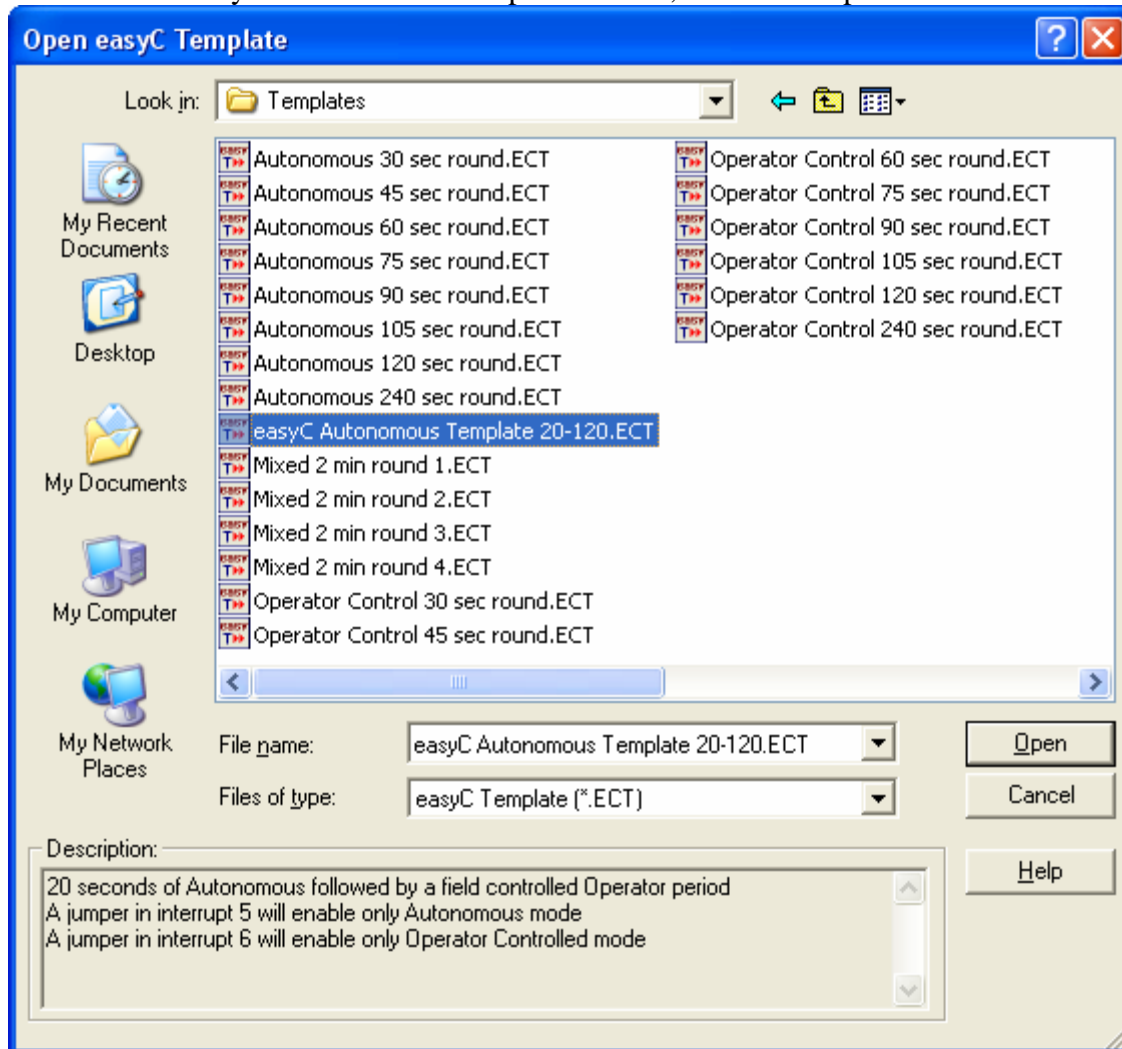
A pre-defined competition template is available in easyC for use in Vex Competitions. A Competition Template provides a standardized platform for teams to use when competing in an event. The template has two sections, one for your Autonomous program and one for your Operator Control program. The template controls the duration of each of these matches and allows the competition field to begin each match. These templates must be placed in the easyC templates folder to function correctly.

A Vex jumper clip installed in interrupt 5 on the Vex controller will run only the autonomous segment of your code. A Vex jumper clip installed in interrupt 6 on the Vex controller will run

only the operator control segment of your code. If no jumper clip is installed, the autonomous portion of your code with run first and followed by the operator control segment of your code.

To Open a Competition Template:

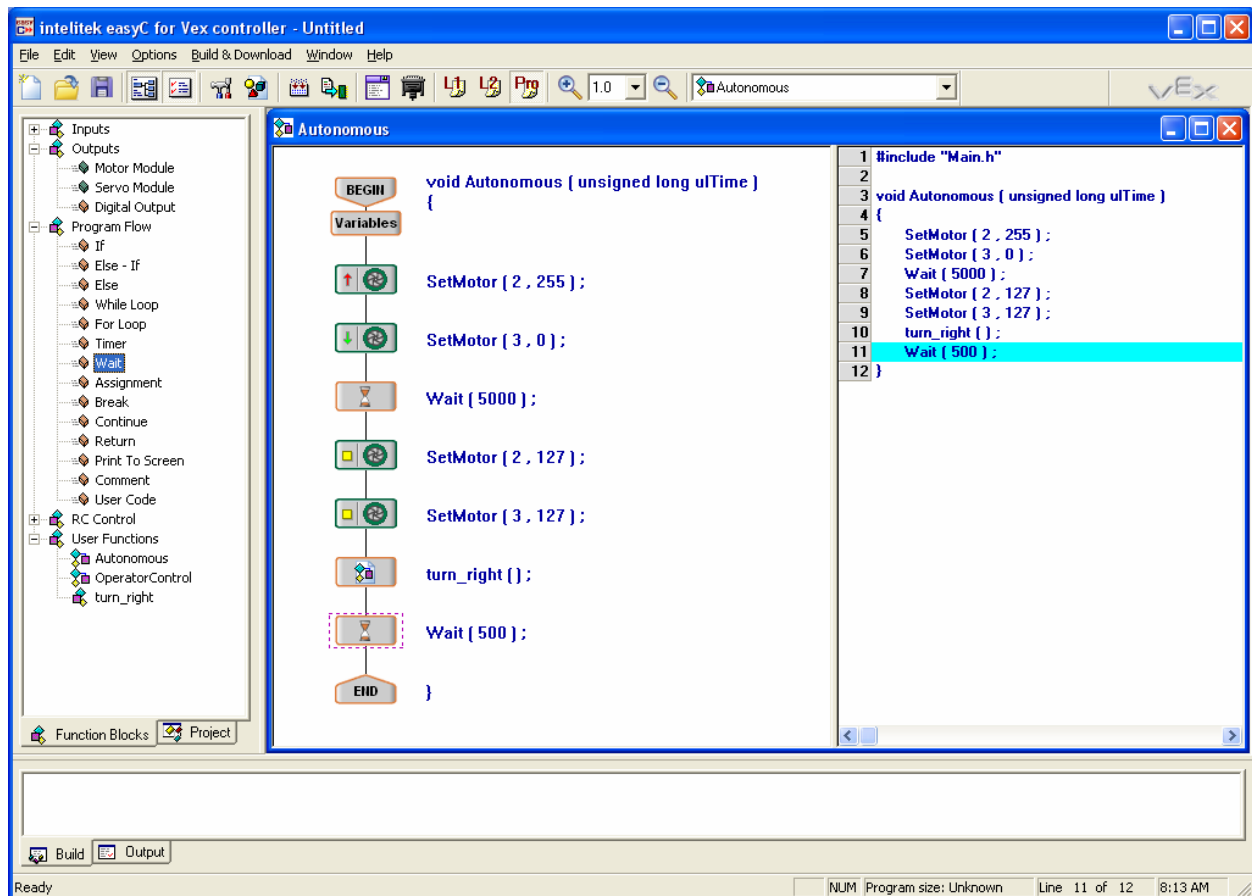
1. Place the easyC Autonomous Template 20-120 in the easyC Templates folder!
2. Go to File, and Select Open Project.
3. Change the 'Files of Type' from easyC Project to easyC Template using the drop down menu. The window will automatically display the default directory for Templates.
4. Select the easyC Autonomous Template 20-120, and select Open



The Main Function will be displayed with two Function Blocks already defined. These Function Blocks refer to user functions that have also been pre-defined for your use. The numbers in parentheses indicate the length of time of each period (in seconds). The easyC Autonomous Template 20-120 has an Autonomous period of 20 seconds and a 254 second OperatorControl period. The OperatorControl period is set to the max default time of 254 seconds because the actual time of the operator controlled matches will be controlled by the competition field during each match.

Autonomous Mode

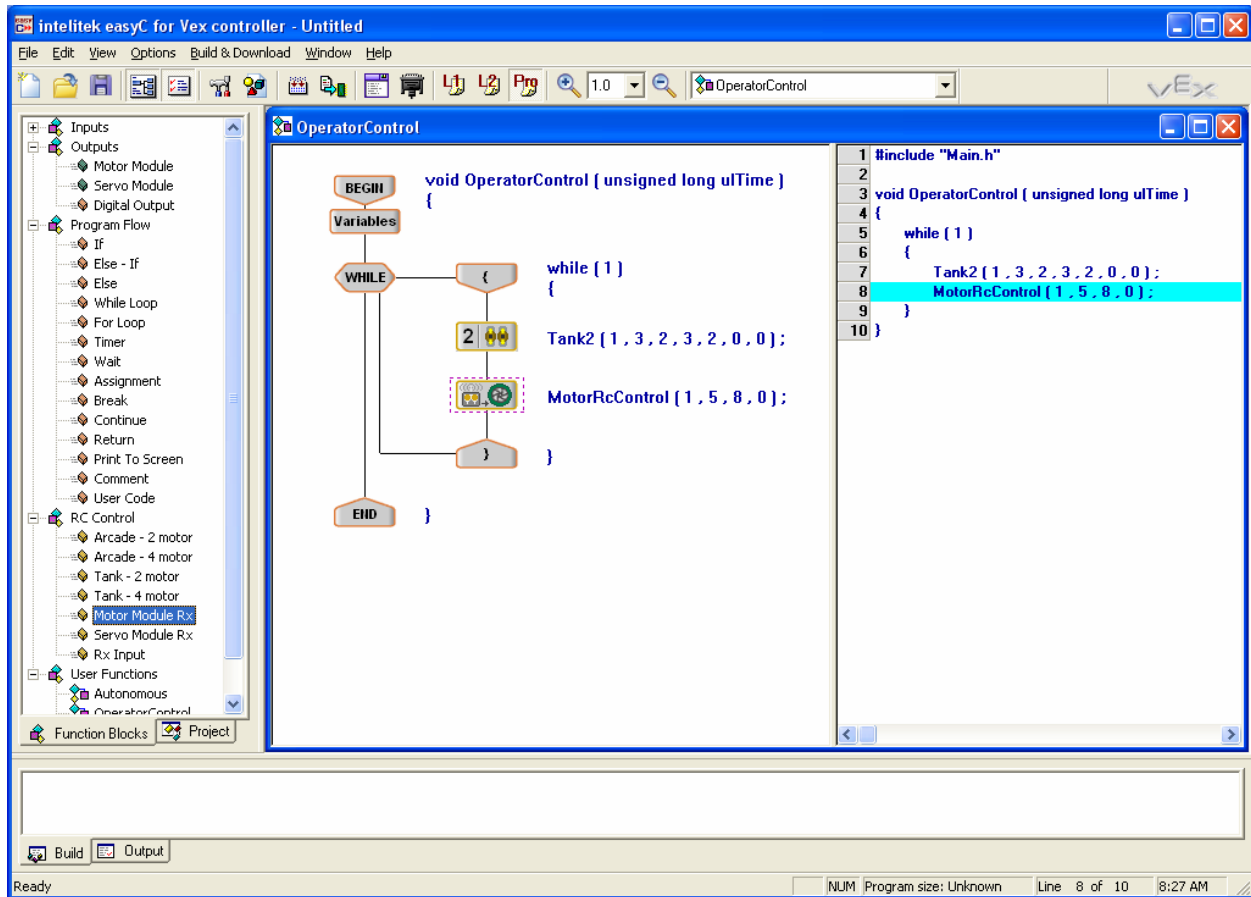
During the Autonomous Mode, the robot will move independently of operator controls for the prescribed length of time. The Autonomous period will begin when your robot first sees a signal from your transmitter or the competition field. This is unlike a regular easyC project that would begin as soon as the robot's controller is turned on. Your robot will execute commands in the Autonomous section of your program until the time period elapses. During the autonomous portion of the template, any signals from the transmitters are ignored. This means that switching off your radio controller WILL NOT deactivate the Autonomous period or your robot. The orange eye on the controller will blink when the controller is in Autonomous Mode.



Note: A jumper clip must be placed in interrupt 5 to run only the Autonomous portion of your program. For most competitions, the autonomous period is directly followed by the operator control period so you do not need to use a jumper during the match. Be sure your robot is ON when you place it onto the field at the beginning of each match. Do not turn on your transmitter until you are plugged into the competition field!

Operator Controlled Mode

Programming in the Operator Controlled Mode is very similar to programming in a normal project. The OperatorControl function of the template does not contain any predefined instructions; in fact the template is completely blank at the start just like the Autonomous function. However, you have the ability to communicate with your transmitter during the Operator Control period. You may add blocks from the RC Control group to control your robot. Switching off your transmitter during the Operator Controlled period will stop your robot. If you turn your transmitter back on, your robot program will continue to execute until the allotted time expires. At the end of the allotted Operator Controlled period, your robot's program will stop automatically. The competition field will control the 2-minute duration of the Operator Control match.



***Note:** A jumper must be placed in interrupt 6 if you only want to run the Operator Controlled portion of the template. For most competitions, the autonomous period is directly followed by the operator control period so you do not need to use a jumper during the match.*

On field robot testing:

When you place your robot on the field for an Operator controlled match, you will be asked to verify your robot and transmitter are functioning properly. This is simply done by turning on your transmitter and moving your robot. Once this test is complete, your transmitter will be disabled until the start of the match. **You must turn off your robot controller and turn it back on to reinitialize the template before the start of the match.**