

Autonomous Receiver Box Specifications

The Autonomous Receiver Box (ARB) is required on all robots to inform the robot controller of the beginning and end of autonomous mode, as well as when the robot is enabled or disabled. The boxes are color coded so that each team may be independently enabled or disabled; make sure you get attach the correct color box for your team at the start of each match! The ARB has two connectors that need to be connected to digital inputs 13 and 14 on the robot controller. The connector with the yellow wire carries the signal for autonomous mode; it must be connected to pin 13. The green wire is the enable/disable signal and must be connected to pin 14.

It is the responsibility of each team to ensure that their robot's program correctly obeys these signals. If the ARB is properly connected, the default code in WPILib.h will handle these signals. The C functions *IsEnabled()* and *IsAutonomous()* are provided to read the signals. The functions return TRUE or FALSE, respectively, depending on if the robot is enabled or in autonomous mode or not.

For teams that are not using WPILib, the ARB may be attached to any pins they see fit. The team must write their code such that when the disable signal is received, the entire robot will immediately stop moving (under power). Robots start the match disabled and are enabled when the match timer begins counting down, so the code must also be able to resume from a disabled state. The code must also ignore all input from the operator controls for as long as the autonomous signal is being received.

Technical Specifications:

The ARB consists of a small radio receiver that receives a signal broadcast on 434MHz by the field control system. The green light on the box will blink regularly when it is correctly receiving signals.

ARB Outputs:

Input	Value	Function
Autonomous (Yellow, pin 13)	HIGH (5V nominal)	This value is present for the duration of autonomous mode. The robot must ignore all input from the operator controls, but may still function using any other available inputs.
	LOW (0V nominal)	This value is present whenever the robot is not in autonomous mode.
Enabled (Green, pin 14)	HIGH	This value is present as long as the robot is enabled, which, barring disqualification, will be the duration of the match, including both autonomous mode and operator mode.
	LOW	This value is present when the robot is disabled. The robot must not power any motors or other actuators when in this state. The robot will be in this state before and after every match.