## Working with Arduino

The Arduino is a very popular small microcontroller. Thanks to its simple but powerful IDE (integrated development environment), many libraries and low price, it’s become perhaps the most common hobbyist microcontroller. You can find more information at <https://www.arduino.cc/>

Many Arduino devices are connected via a Bluetooth Rfcomm (also known as SPP, Serial Port Protocol) mini-board. Many are available from different vendors.

To communicate with an Arduino using a Bluetooth serial interface, follow the instructions in Rfcomm (Serial-port) Bluetooth. There are methods like PickDevicesRfcommName (“\*”) to let your end-user pick a Bluetooth device to connect to and to send and receive data.

There isn’t a single Bluetooth protocol for these connections. Many devices (like the Slant Robotics LittleBot and Infineon DPS310) have their own mini-protocol. Other boards use “standard” protocols like the Ardudroid.

If there’s some protocol you would like supported, please contact [shipwrecksoftware@live.com](mailto:shipwrecksoftware@live.com) and let us know what protocol and what you’re building!

### Slider (x1, y1, x2, y2, text, function)

Creates a slider control on the graphics screen at the given position. The slider’s text will be the text, and when the value changes, the function will be called.

You can set the slider Min and Max value; if you don’t set them, the default values are 0 and 255 (because that corresponds to byte values)

## Release Notes (3.12, November 2017)

Added full-screen graphics with g = Screen.FullScreenGraphics(). This method will create a graphics screen that is independent of the normal screen. It will cover the entire non-menu area of the calculator. A small “X” at the upper-right corner, when tapped, will hide the screen for about five seconds, allowing you to examine the regular screen or cancel the program. The full screen graphics screen will be removed automatically when the program stops.

Added graphics.Text (x1, y1, x2, y2, text, size) to display text. The text can be Unicode characters like “👻”.

Graphics shape objects (Circle/Ellipse, Rectangle, Text) can have their opacity set. For example, rect.Opacity = 0.1

Text includes a text.Align = “[LCRS][TCBS]” to set alignment. The first char sets the left/right alignment as Left, Center, Right or Stretch, and the second char set the up/down alignment as Top, Center, Bottom or Stretch.

Improved the PRINT statement so that “orphan” semicolons and commas at the end of a PRINT statement will control what happens on the next statement. This makes BC BASIC more compatible with other versions of BASIC.

Example:

PRINT “ABC” ; “DEF” ;  
PRINT “GHI”

This program used to print on two lines (ABCDEF on one and GHI on the other). Now it correctly print ABCDEFGHI all on one line.