sparkfun
ELECTRONICS

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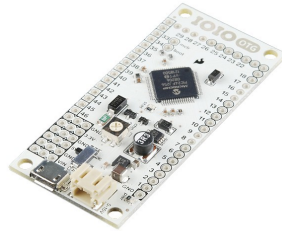[303] 284.0979 [GENERAL]
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Connecting to the IOIO-OTG

The IOIO-OTG can act as either a host or an accessory, depending on what it's connected to. Below is a brief explanation of each connection scheme and how it works:

Connection to an Android Device

When connected to an Android device, the IOIO-OTG will act as a USB host using either the widely supported Android Debug Bridge (ADB) protocol or the newer, higher performance Android Open Accessory (AOA) protocol if supported by the Android. If ADB is enabled on the Android, ADB will take precedence over Open Accessory. Disable ADB to have IOIO working over Open Accessory.

The IOIO-OTG will supply charging current to the Android, which can can limited to some extent in applications where this is desired, by turning the little trim-pot on the board counterclockwise. Use the provided female-A to male-micro-A cable chained to a standard USB cable matching the connector on your Android to use this mode. Alternately, the chaining of the cables can be avoided by purchasing a separate micro-A-male to micro-B-male (or mini-B in case this is what the Android exposes) cable. In this case, make sure the "A" side of the cable is connected to the IOIO-OTG and the "B" side to the Android.

Note that using the IOIO-OTG on your Android device does not require any modifications to the Android OS or the hardware, thus preserving the warranty as well as making the functionality available to non-hackers.

Connection to a Bluetooth Dongle

When connected to a Bluetooth dongle, the IOIO-OTG will again act as a USB host, exposing itself as a virtual serial port to either an Android device or a PC. Use the provided female-A to male-micro-A cable to plug in a standard Bluetooth dongle to the IOIO-OTG.

Connection to a Host PC

When connected to a host PC. the IOIO-OTG will act as a USB device, exposing itself as a virtual serial port, much like in the Bluetooth case. Use a standard male-A to male-micro-B cable, with the "B" side attached to the IOIO-OTG and the "A" side to the PC. In this mode, the IOIO can be powered over USB (limited to 500mA) or using an external power supply to its Vin rail.

From a software perspective, your application can be completely agnostic to whatever underlying connection is used: you will get notified whenever a connection of any sort is established or dropped between your app and a IOIO-OTG and will then use a high-level Java API to control the IOIO-OTG pins, as if they were an integral part of your Android or PC.

The switch on the board should normally be in the "A" (auto) position to allow the IOIO-OTG to automatically detect its role. However, in order to support some non-standard cables and adapters, you can shift it to the "H" (host) mode, which will override the auto-detection of the role and force the IOIO-OTG to act as a host. Do not use this mode when connecting to a PC.