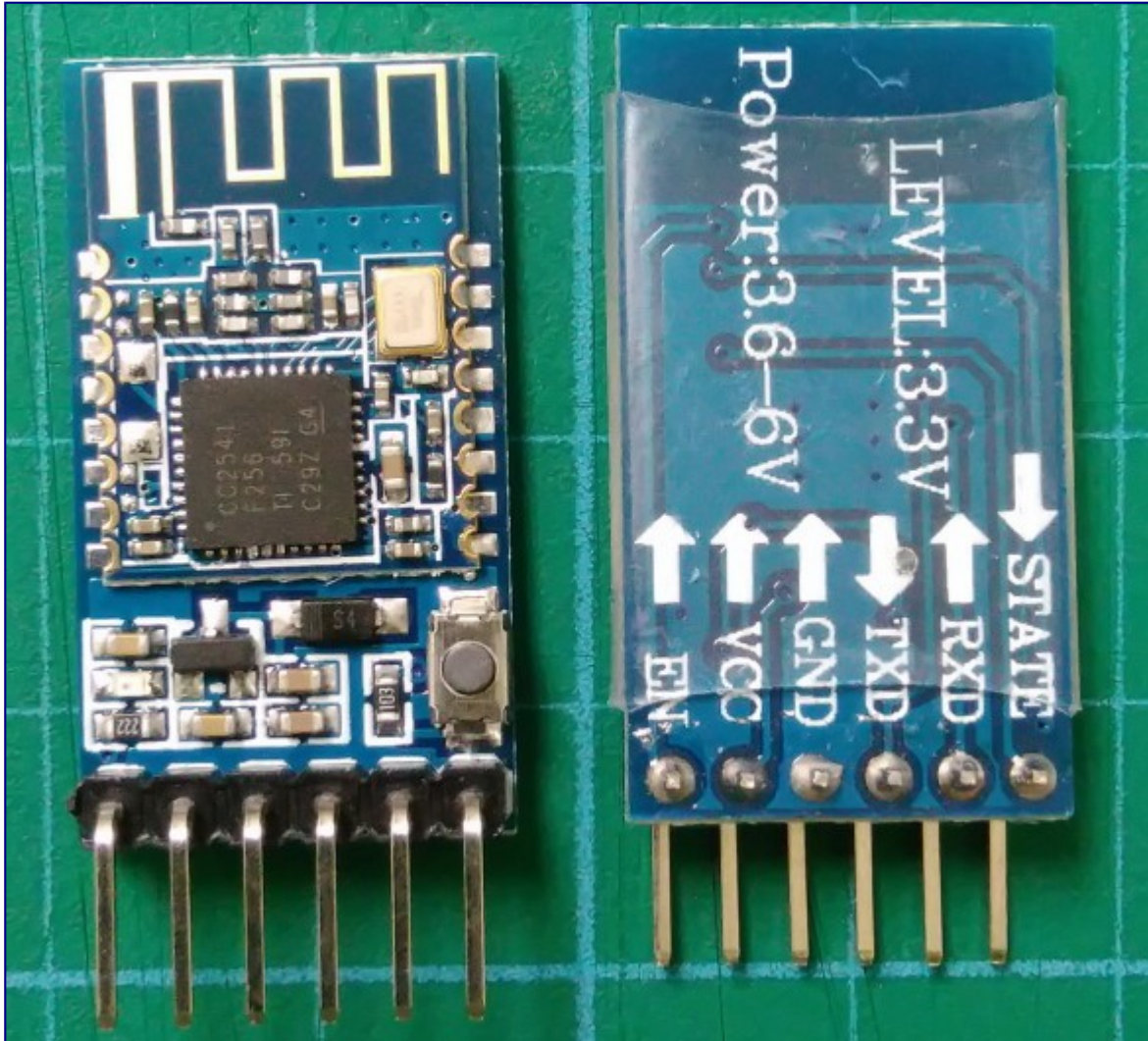


BT05-A mini BLE Bluetooth V4.0 iBeacon

Similar modules sold as DX-BT05. This module is based on the Bolutek CC41-A. This is the same form factor as the HM-11, however, the layout is different. The BT05 is sometimes sold as a HM-10 and regarded as a copy of the HM-10, however, I don't see these as copies more like a different version of the same thing. Not sure where these originate from as I can't find this version on the bolutek website nor can I find a manufacturer (didn't spend too long looking though).



The break out pins are standard layout with a STATE pin and a EN pin.

CC2540 or CC2541 chip.

Bluetooth version 4.0

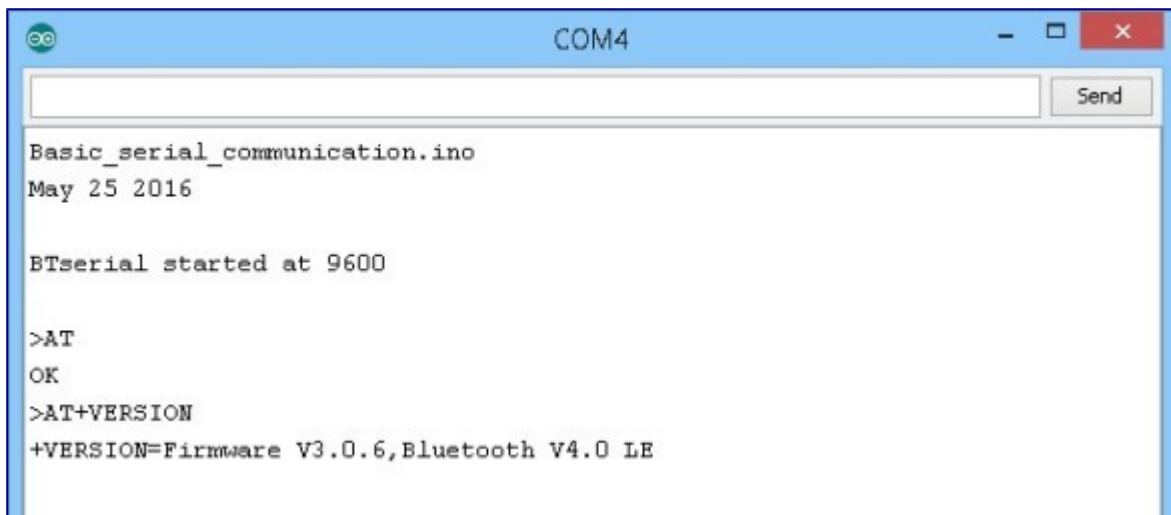
Firmware is reported as Firmware V3.0.6, Bluetooth V4.0 LE.

Default baud rate is 9600

Default PIN is 000000

The modules report themselves as BT05-A.

This is a Bluetooth 4.0 BLE module and not compatible with Bluetooth 2.0 or 2.1. The model I received includes the CC2541 chip as opposed to the CC2540 chip.



AT commands require line ending characters (`\r\n`). Since the firmware is by Bolutek `AT+HELP` gets you a list of the available commands.

```
>AT+HELP
*****
* Command          Description          *
* -----          -
* AT               Check if the command terminal work normally *
* AT+RESET         Software reboot      *
* AT+VERSION       Get firmware, bluetooth, HCI and LMP version *
* AT+HELP          List all the commands *
* AT+NAME          Get/Set local device name *
* AT+PIN           Get/Set pin code for pairing *
* AT+PASS          Get/Set pin code for pairing *
* AT+BAUD          Get/Set baud rate    *
* AT+LADDR         Get local bluetooth address *
* AT+ADDR          Get local bluetooth address *
* AT+DEFAULT       Restore factory default *
* AT+RENEW         Restore factory default *
* AT+STATE         Get current state    *
* AT+PWRM         Get/Set power on mode(low power) *
* AT+POWE         Get/Set RF transmit power *
* AT+SLEEP        Sleep mode           *
* AT+ROLE         Get/Set current role. *
* AT+PARI         Get/Set UART parity bit. *
* AT+STOP         Get/Set UART stop bit. *
* AT+START        System start working. *
* AT+IMME         System wait for command when power on. *
* AT+IBEA         Switch iBeacon mode. *
* AT+IBE0         Set iBeacon UUID 0. *
* AT+IBE1         Set iBeacon UUID 1. *
* AT+IBE2         Set iBeacon UUID 2. *
* AT+IBE3         Set iBeacon UUID 3. *
* AT+MARJ         Set iBeacon MARJ . *
* AT+MINO         Set iBeacon MINO . *
* AT+MEA          Set iBeacon MEA . *
* AT+NOTI         Notify connection event . *
* AT+UUID         Get/Set system SERVER_UUID . *
* AT+CHAR         Get/Set system CHAR_UUID . *
* -----          -
* Note: (M) = The command support slave mode only. *
* For more information, please visit http://www.bolutek.com *
* Copyright©2013 www.bolutek.com. All rights reserved. *
*****

☒ Autoscroll
Both NL & CR 9600 baud
```

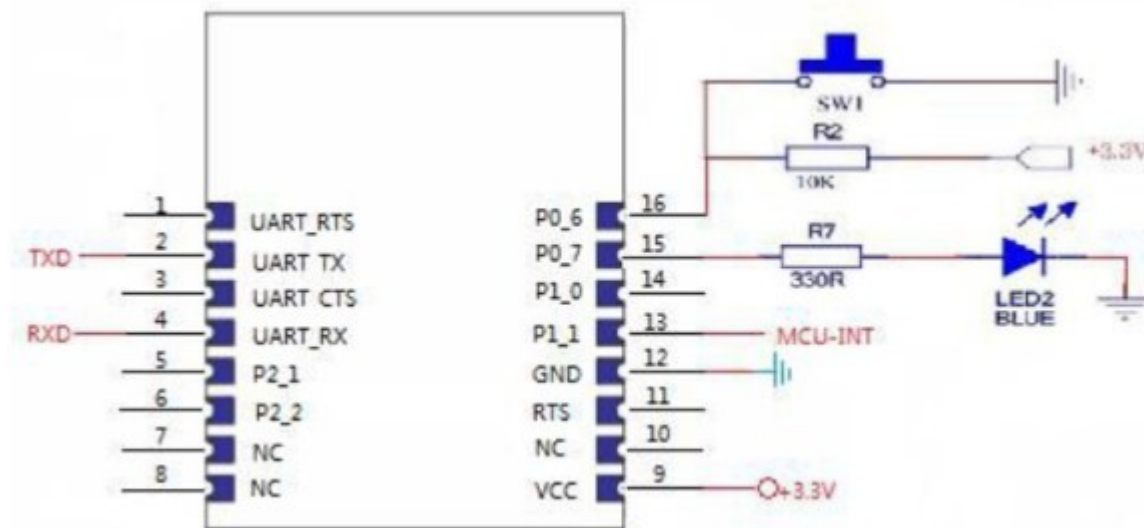
The modules boot in to AT mode and go in to communication mode when a connection is made.

These are smaller than most other modules. Both the breakout board and the actual Bluetooth board are smaller than similar modules. The modules include a small push button switch which I have not investigated yet. A Google search for “DX-BT05 4.0” will get results for similar boards using the regular sized breakout board.

The STATE pin is LOW when no connection and HIGH when there is an active connection.

The EN pin looks like it is connected to pin 16 on the small Bluetooth board (not confirmed), when brought LOW, it will break an active connection. It does not disable the module though.

Pins



Pin 16 (P0_6)

When the module is in sleep mode, briefly bringing PIN 16 LOW will wake up the module and the module will respond with “+WAKE\r\nOK\r\n”.

When there is a connection, briefly bringing PIN 16 LOW will initiate a disconnection request.

Sleep Mode

Sleep mode is entered using “AT+SLEEP\r\n”. The module will return “+ SLEEP\r\nOK\r\n”

To wake, either send a string of 80 or more characters (the string cannot contain AT commands) or bring pin 16 LOW for a short period. If the module wakes successfully it will return “+WAKE\r\nOK\r\n”

LED in master mode

- quick flash 300ms on, 300ms off – searching/waiting for a connection.
- on – connected.

LED in slave mode

- slow flash (800ms on, 800ms off) – waiting for pairing
- on – connected

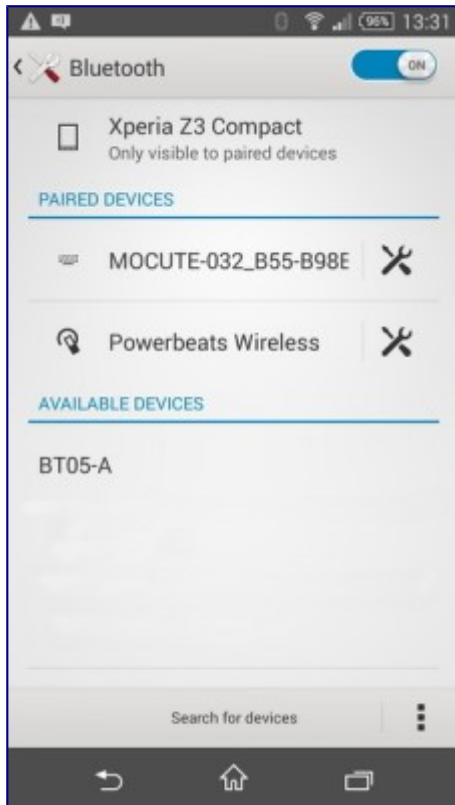
According to the seller this is compatible with Android 4.3 or later as long as the device supports Bluetooth 4.0/BLE. It is compatible with iphone 4s onwards and also ipad 3,4,and the ipad minis.

If your Android device does not find the BT module the module may be in master/central mode. Change to slave/peripheral mode using the command AT+ROLE0

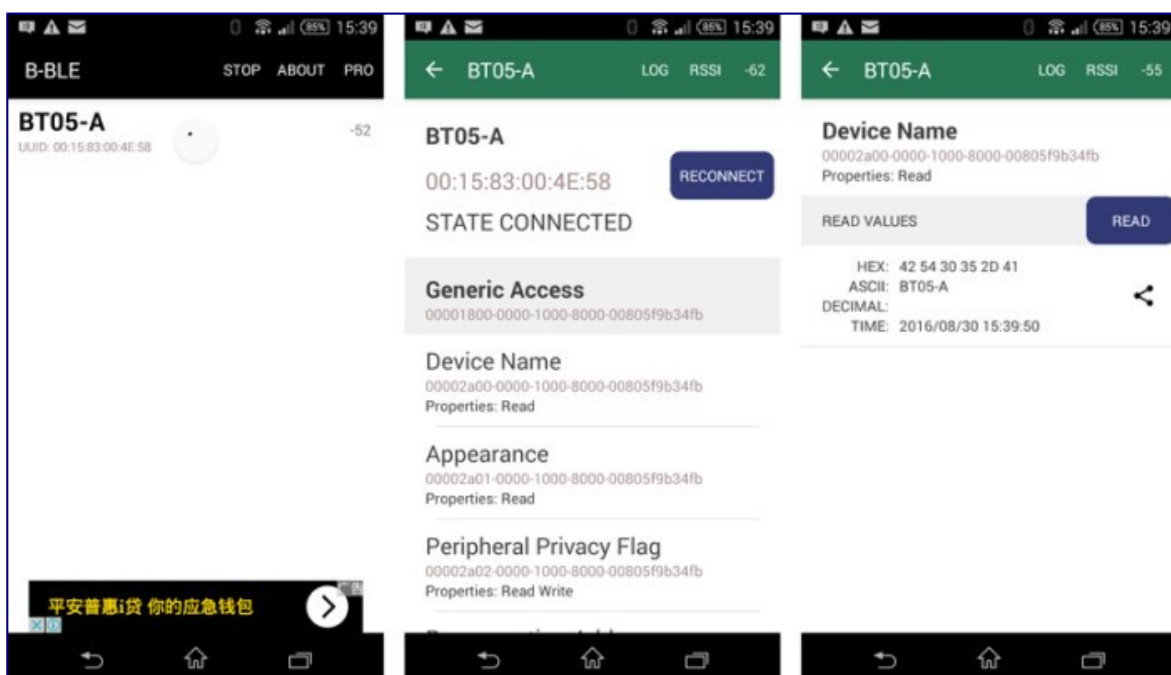
Sony Z3 Compact:

The modules show up in Settings => Bluetooth as “BT05-A” but it does not pair (I think is it not

required). If you try to pair you briefly get a “trying to pair message” and then it goes back to just showing the name.

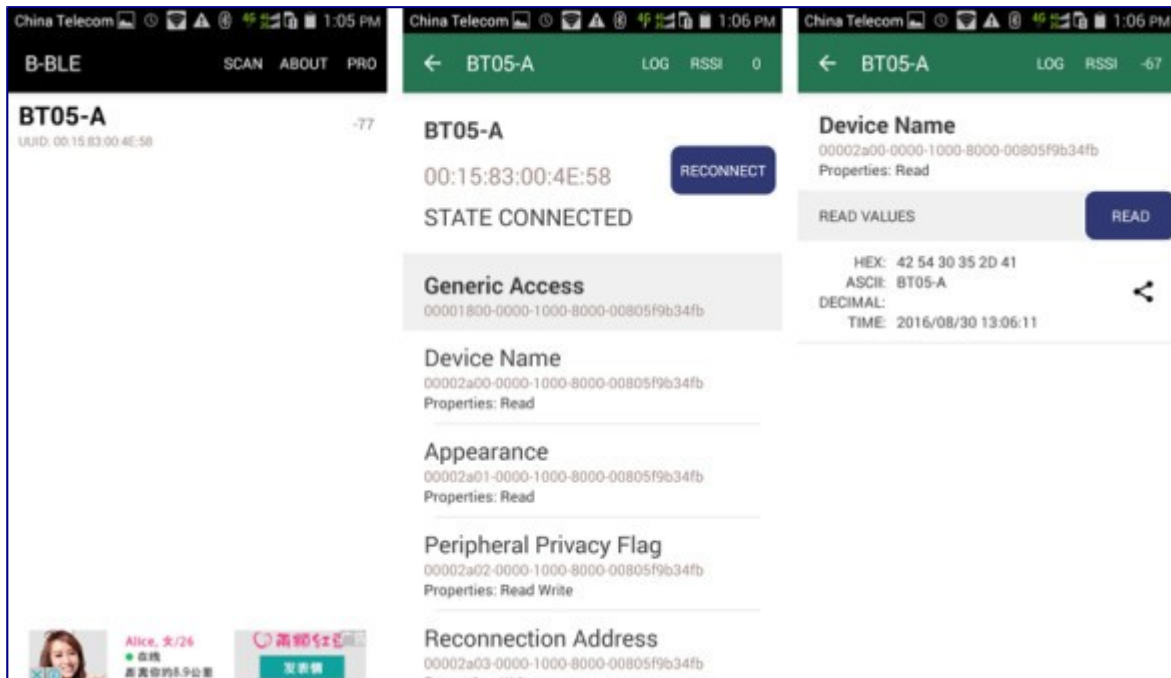


The B-BLE app connects without the need for the PIN.



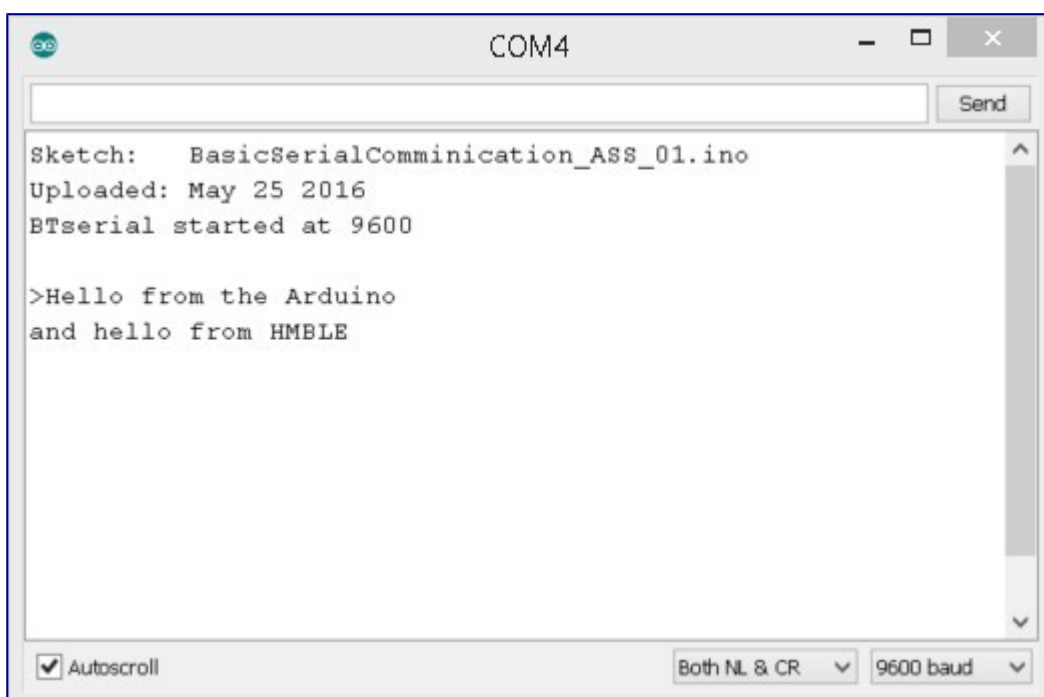
Huawei honor 6 pro:

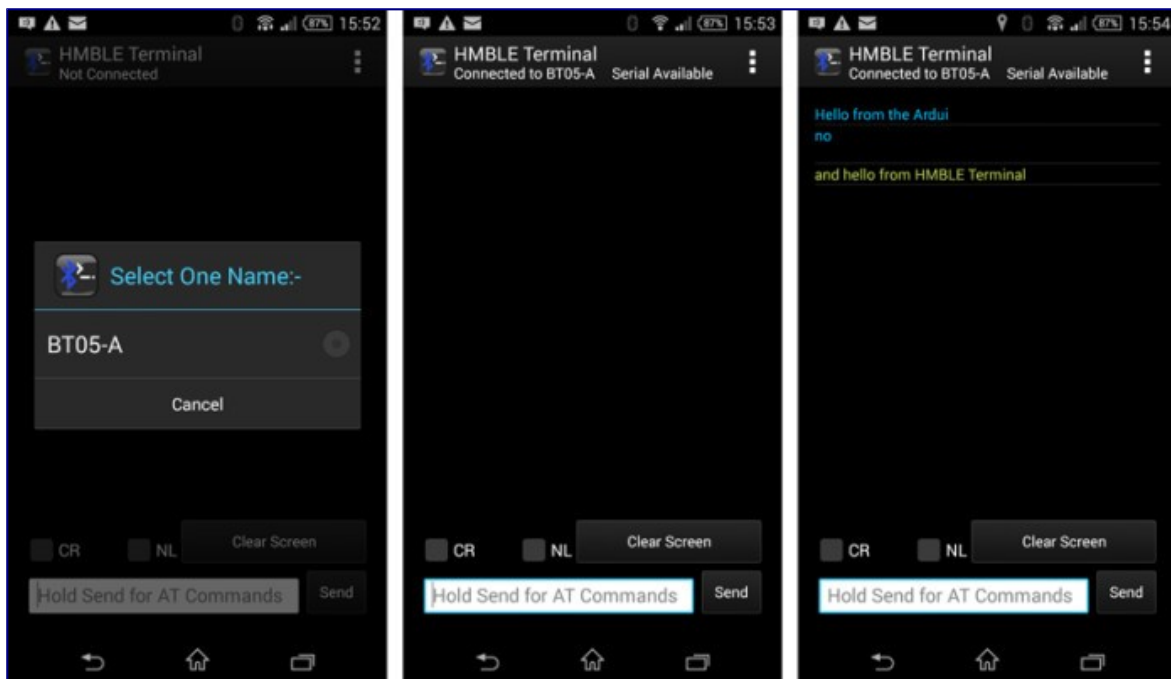
The BT-05A does not show up in the Settings => search for Bluetooth devices. It does show up in the B-BLE app as a BT05-A



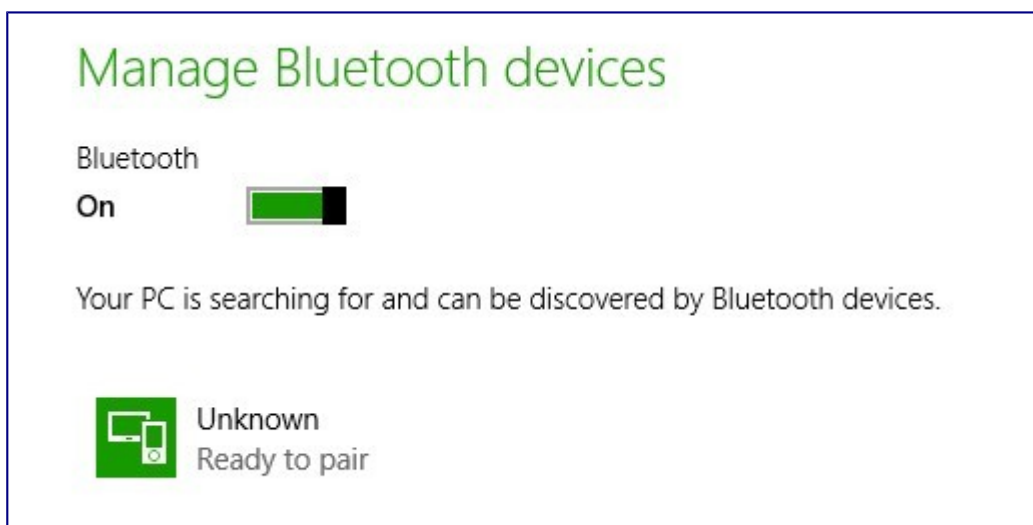
Serial Connection:

The HMBLE Terminal app on the Sony finds and connects to the BT-05A and serial communication works as expected:





A PC running Windows 8.1 with Bluetooth BLE finds and connects. A PIN is not required to make a connection.



Manage Bluetooth devices

Bluetooth

On



Your PC is searching for and can be discovered by Bluetooth devices.



BT05-A

Connected

Downloads

[Basic spec sheet in Chinese](#)

<http://www.martyncurrey.com/?wpdmdl=3119>

[AT Commands \(Chinese\)](#)

<http://www.martyncurrey.com/?wpdmdl=3123>

[BLE-CC41-A basic AT commands](#)

<http://www.martyncurrey.com/?wpdmdl=3028>

Further Information

[Arduino forum: Hm-10 ble device not working](#)

<http://forum.arduino.cc/index.php?topic=334466.0>

[Bolutek website](#)

<http://www.bolutek.com/index.jsp>

[Uploading firmware.](#) Not tested.

<http://ladvien.github.io/robots/advancedish-hm-10/>