Bluetooth Low Energy (BLE)
Block Data Sheet

SPECIFICATIONS
- Pairing Code: None
- Range: ~10m (in line of sight)
- Baud Rate: 115200kbps
- Reliable Throughput: 24kbps
- Input Voltage Range: 2.4-3.6V
- Consumption: ~18mA

FEATURES
- Bluegiga BT121 module
- Bluetooth 4.1 chipset
- UART interface
- Integrated chip antenna
- Plug & play operation
- Programming interface pins

APPLICATIONS
- Rapid prototyping of custom hardware
- Biomedical engineering projects

GENERAL DESCRIPTION
This ready-to-use Bluetooth Low Energy (BLE) module is a perfect match for real-time wireless data streaming using our MCU block. It is pre-programmed with a custom firmware that behaves similarly to a serial replacement profile, although the programming pins are accessible, enabling easy re-programming and upload of your own code. The Bluetooth 4.1 chipset provides maximum multiplatform compatibility especially for mobile applications, given that most devices are BLE-compliant by default.

1 http://bitalino.com/datasheets/BT121_Datasheet.pdf
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PROFILE SETTINGS
The firmware on the BLE module is pre-programmed to work as an UART bridge supported on the Generic Attribute Profile (GATT), behaving similarly to a serial replacement profile. By default you can connect directly to the device using the MAC address as no pairing is needed.

Should your application connect using the device UUID rather than the MAC address (e.g. like the iOS SDK by Jasmin Nizic\(^2\)) you can either retrieve the UUID programmatically by performing a device search or using a BLE scanning tool\(^3\) (device name “BITalino BLE”).

After establishing the connection you should search for services; an "Exchange Data Service" with UUID c566488a-0882-4e1b-a6d0-0b717e652234 should be found. This service has two characteristics, namely:

> Commands: UUID 4051eb11-bf0a-4c74-8730-a48f4193fcea
> Frames: UUID 40fdba6b-672e-47c4-808a-e529adff3633

The BITalino command set found in the MCU data sheet\(^4\) should be sent through the Commands characteristic and notifications should be enabled for the Frames characteristic since the data packets sent from the device are received through that path.

ORDERING GUIDE

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\(^2\) http://bitalino.com/index.php/development/apis
\(^3\) https://itunes.apple.com/us/app/bluetooth-smart-scanner/id509978131?mt=8
\(^4\) http://bitalino.com/datasheets/REVOLUTION_MCU_Block_Datasheet.pdf