



## How to connect BB3 to Android phone over terminal application

1. Turn Off Bafang motor and plug BB3 device in front of LCD display
2. Connect BB3 with your android phone over USB-C cable (not included in package, use full data capable cable)
3. Open Serial USB Terminal app and lets make some initial USB device setup (needed only once)
  - 3.1 Click Menu button in top left corner

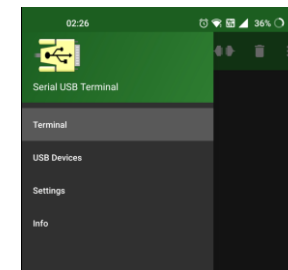
### How to install USB terminal application

1. Go to *Play Store* on your android phone
2. Search for “Serial USB Terminal” and click Install

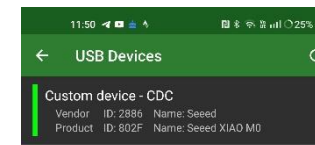


*Note1: There is many free USB serial terminal apps, you can choose your favourite.*

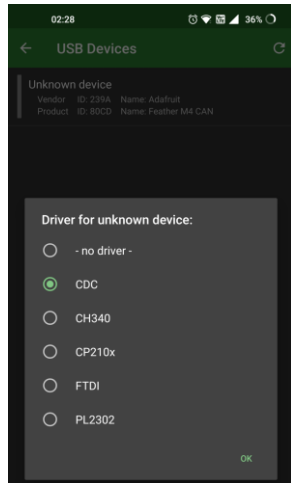
*Note2: There could be also Apple terminal application, you need to get USB-C to Lightning cable or converter. I have not tried it as no iPhone available.*



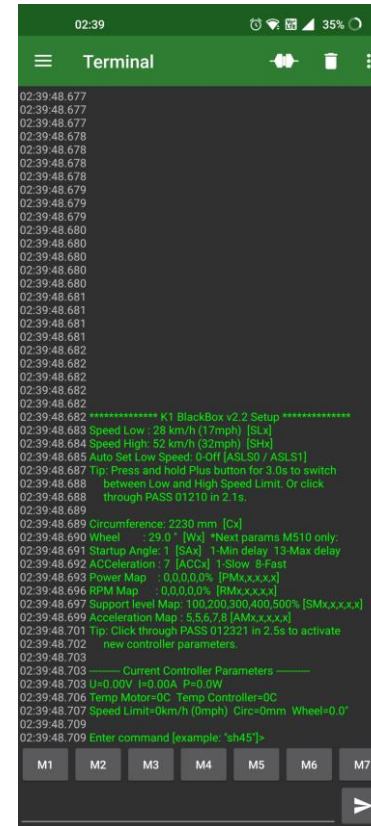
- 3.2 Select “USB Devices” – click on USB device named “Seed XIAO M0”




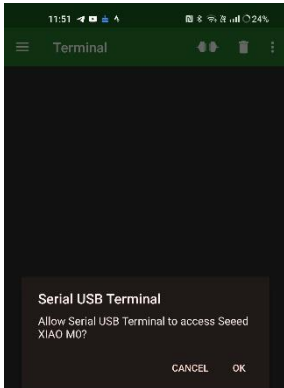
3.3 Select CDC driver for BB3 device click OK and go back to terminal screen



6. You should be now connected to BB3 and you can see setup screen (screen is updating every 3 seconds)

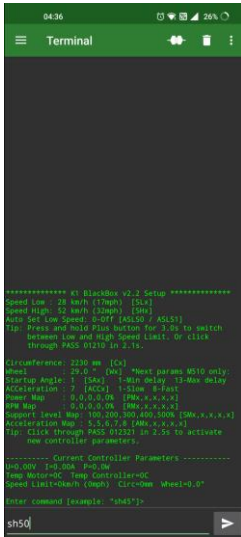


4. Now click on “connect” icon  on the right top side

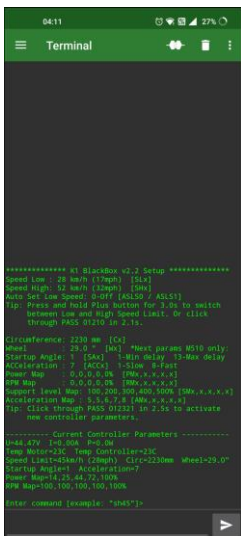


5. Confirm Allow access message by hitting OK

- Enter command (format example in [ ]) of parameter you would like to change and send by arrow icon. This will be stored in BB3 device and screen will be updated.



- Turn On Bafang motor – device will read current motor parameters and show at the end of screen.



*Note: Example screenshot is here with M510 motor controller v1.0 – if you don't have M510 motor you would not see settings of Startup Angle, Acceleration, Power map and RPM map.*

- Now you can activate anytime these new settings by clicking over assistance levels (PAS) 0 1 2 3 2 1 by Plus and Minus buttons. As a confirmation you would see battery indicator going from 0% to 100% and also you would see actual setup of your motor on terminal screen.

*Note: Device did store your original config of your motor into memory after first device turn on. You can any time restore to these settings again by clicking 0 1 2 3 2 1 by Plus and Minus buttons. As a confirmation you would see battery indicator going from 100% to 0%.*

- You can switch between Low and High speed by press and hold Plus button, you would see new speed limit reading on your LCD screen.

For a compatibility with brand new Bafang LCD display DPC 244/245 or DPE180/181 speed limit can be switched also by clicking 0 1 2 1 0 by Plus and Minus buttons. With new display Bafang PAS levels has been changed to: 0 E T S S+ B = 0 1 2 3 4 5

## K1 Black Box 3 commands

You can enter one command per line and send to BB3 by hitting right arrow at the right: ➤

Available commands are shown in brackets – [ ]

### Commands:

**SLxx** – Speed Low – enter in kmh – example “sl25”

**SHxx** – Speed High – enter in kmh – example “sh45”

**ASLSx** – Auto Set Low Speed function. Device will set low speed after each turn on of Bafang motor. Device needs to be permanently installed on an ebike. – 0 is Off, 1 is On – example “asls1”

**CIRCxxxx** – Circumference of rear wheel – enter in millimetres – example “circ2230”  
(29” wheels into terrain cca 2230mm, 27.5” wheels – 2120 mm)

**Wxx** – Wheel size – enter in inch – example “w29” – this parameter does not affect anything only what is shown on your display in Menu Information screen

**DOS** – Delete Original Setup – you would delete your original motor setup and device will read and store your motor setup on next power on (USB cable needs to be disconnected first) – example “dos”

**CAL** – run motor calibration process. Follow the instructions!

**ODOx** – Set ODO km. Works only with new Bafang display – DPC244/245

**INFO** – show read only motor info

**RC** – Reset Controller to Bafang default controller settings – works only with M510 motors.

### Settings for M510 FC1.0 motors only:

**SAXx** – Startup angle – how much you need to turn pedals to engage motor assistance. - Enter 1 (fast assistance) to 13 (slow assistance) – example “sa1”

**ACCx** – Acceleration – I don’t feel any change with this parameter on a motor behaviour. Maybe in future Bafang firmwares. Enter 1 (low acceleration) to 8 (fast acceleration) – example “acc1”

**PMxx,xx,xx,xx,xx** – Power map adjustment for PASS 1 to 5 - enter in percentage – example “pm10,25,50,75,100”

**RPMxx,xx,xx,xx,xx** – RPM map adjustment for PASS 1 to 5, is OK to have all on 100%. You can experiment and lower these values if you wanna set your natural cadence - when motor ramping down power assistance and do not accelerate further (helps to lower battery consumption during constant speed ride) - enter in percentage – example “pm85,85,100,100,100”

### Additional settings for M510 FC2.0 motors only:

**SMxx,xx,xx,xx,xx** – Support level Map adjustment for PASS 1 to 5 - enter in percentage – example “pm100,200,300,400,500”

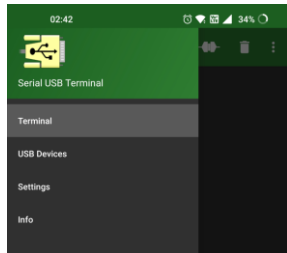
**AMxx,xx,xx,xx,xx** – Acceleration Map adjustment for PASS 1 to 5 - enter 1 to 8 – example “am6,6,6,7,8”

Note: First firmwares of M510 had a bug and were ignoring these settings. You need to have fw. v 8.1 (36V) or 10.1 (48V)

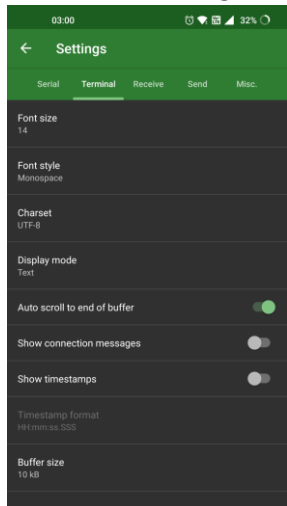


# Terminal setting for better screen view format

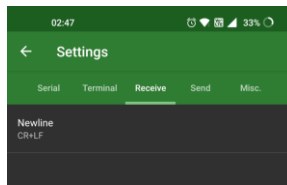
1. Click Menu button in top left corner and click Settings



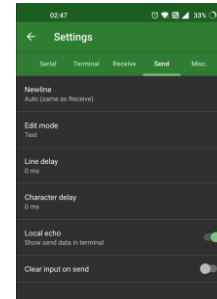
2. On Terminal tab select Monospace Font type and turn off Show connection message and Show timestamp.



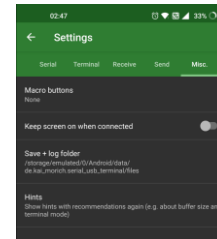
3. On Receive tab select "CR+LF"



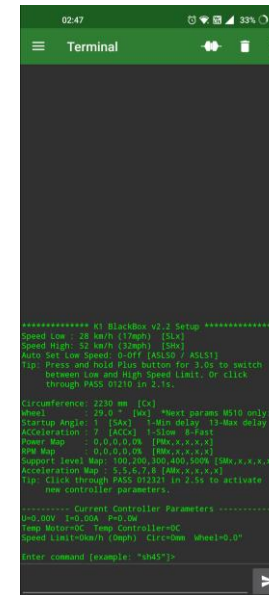
4. On Send tab "Line delay" and "Character delay" should be 0ms



5. On Misc tab you can hide "Macro buttons"



Then the terminal screen view would look as follow:

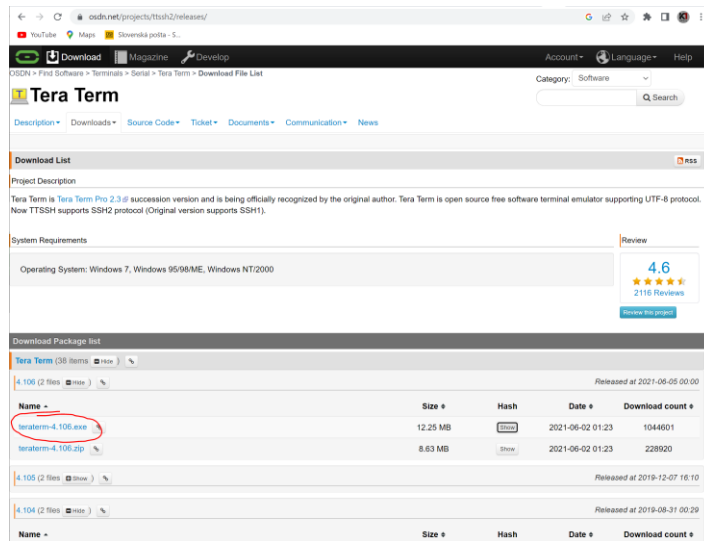


# How to connect BB3 to computer over terminal application

1. There are many terminal applications. Lets use the simple one called Tera Term.

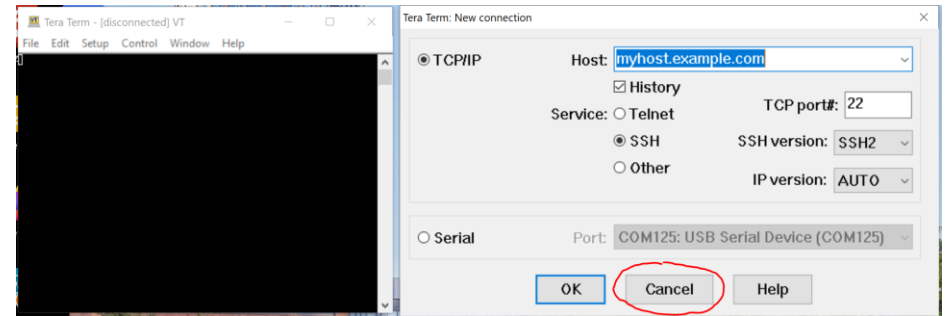
Go to <https://osdn.net/projects/ttssh2/releases/>

Download and install latest version:

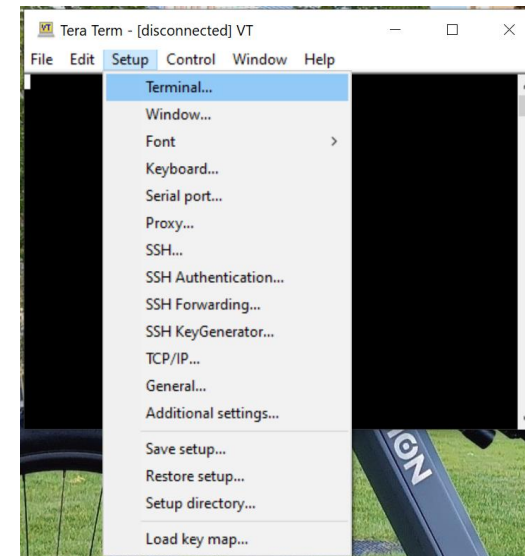


Click and wait a while for save dialogue. Download and install application.

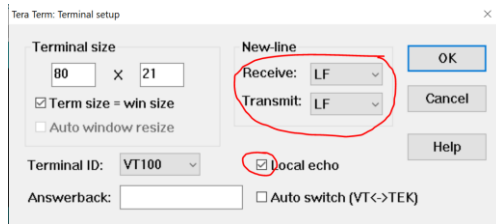
2. Run Tera Term and lets make simple initial setup of application. Hit Cancel on initial screen.



3. Go to Setup and Terminal...

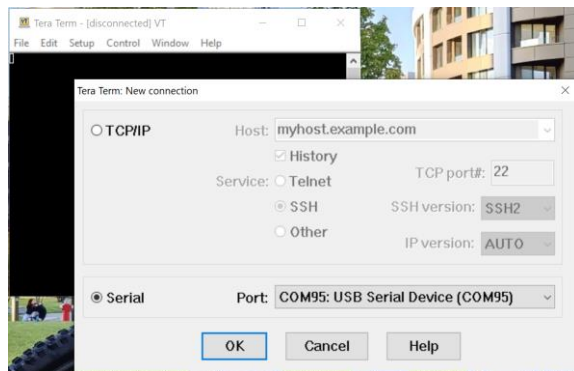


4. Select LF and LF and tick Local echo and hit OK.

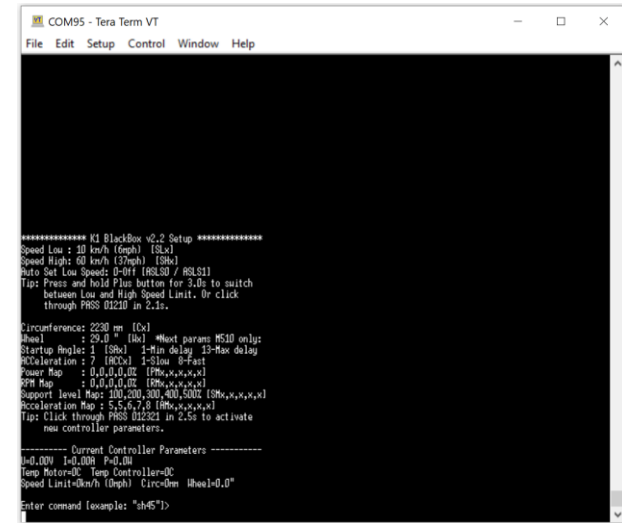


5. Now connect BB3 over USBC cable. Wait few seconds for COM port to come up in your system.

6. Go to File and click New connection...



7. Tick Serial. You should see here available COM port where BB3 is communicating. Hit OK and you should see BB3 setup screen.



Note: While you typing a command – typed characters could disappear. That's just fine, just complete your command and hit enter. Parameter will be updated and stored in BB3.