



## Alltrax Bluetooth® Modules for XCT Motor Controllers and XCT / BMS Lithium Systems

File: DOC113-0018-H\_BLUETOOTH-Operators Manual.pdf, Released Rev H, EC-072519  
**ALLTRAX PN: BLUETOOTH-MODULE (As released FCC Part 15B Test completed 10/21/2019)**  
**(Kit includes cables for either XCT Only /or/ with Alltrax BMS Lithium Systems)**

**NOTE: "Bluetooth®" is a registered trademark which in this document or on drawings or file names was not possible to show the trademark symbol, but is assumed that all references made to Bluetooth is a registered trademarked.**

The XCT and the Alltrax Lithium Battery Management BMS have CAN bus capability that Speak the Alltrax communication protocol. The new Alltrax BLUETOOTH MODULE can now connect to your smart phone to access data, gauges, and monitor performances. It also allows users to adjust settings and set the personality functions (Normal, User 1, and User2). **The BLUETOOTH MODULE is backwards compatible to ALL XCT and BMS units built to date that use the CAN BUS to transfer data to the BLUETOOTH MODULE.**

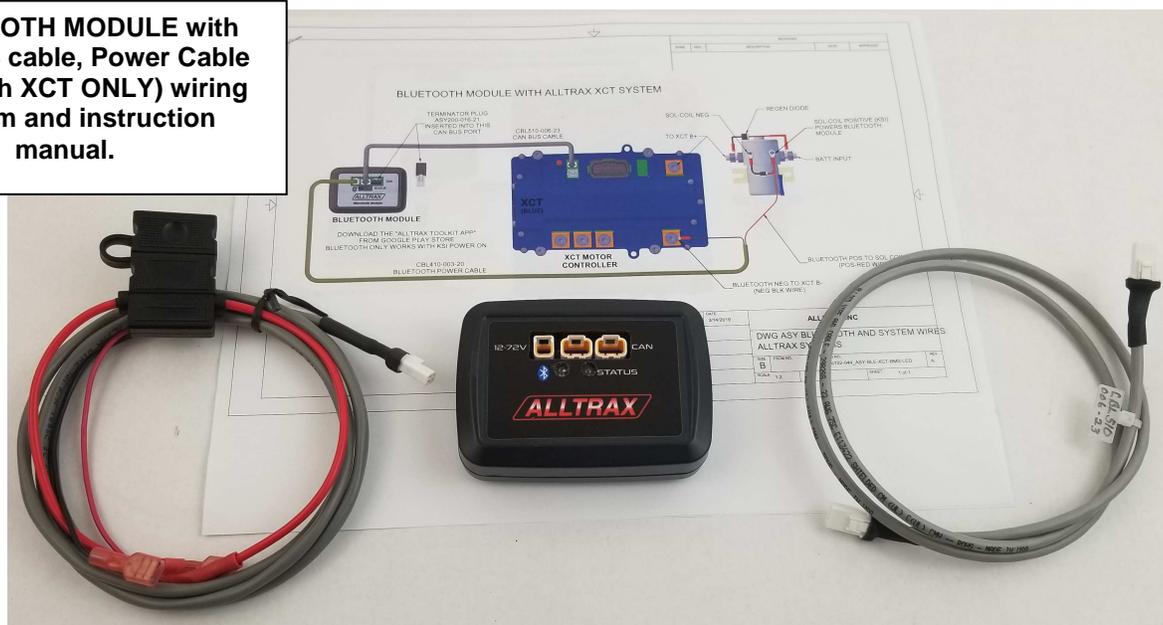
The user can download a free version of **ALLTRAX TOOLKIT APP** from Google App Play Store for Android (4.2 or newer) and I-Phone **IOS#TBD**. A more powerful and customizable paid version **ALLTRAX TOOLKIT-PRO** will also be available to allow user settings, screens, and gauge packages to customize the user experience.

The BLUETOOTH MODULE is fully epoxy potted against the elements and includes status LEDs for trouble shooting status and BlueTooth® communication connection.

### Programming and Software Upgrades:

With internet connection through the smart phone, you can load motor field maps provided by Alltrax, but larger controller software or firmware upgrades will be very slow and take some time, limited by the Bluetooth® Bandwidth. It would be preferred to do any large controller software or firmware upgrades using a laptop and USB cable as a high speed connection.

**BLUETOOTH MODULE with CAN BUS cable, Power Cable (used with XCT ONLY) wiring diagram and instruction manual.**



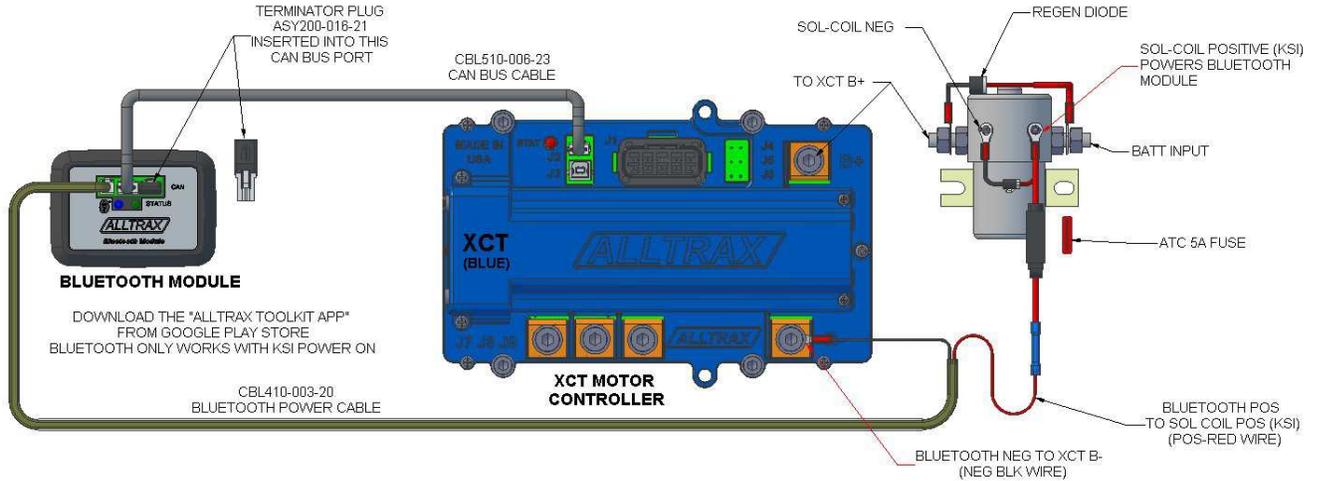
**1. INSTALLATION:**

There are TWO Installation possibilities:

1) **XCT only – See SECTION-2:**

A LEAD BATTERY PACK system where the BLUETOOTH MODULE will communicate to the XCT

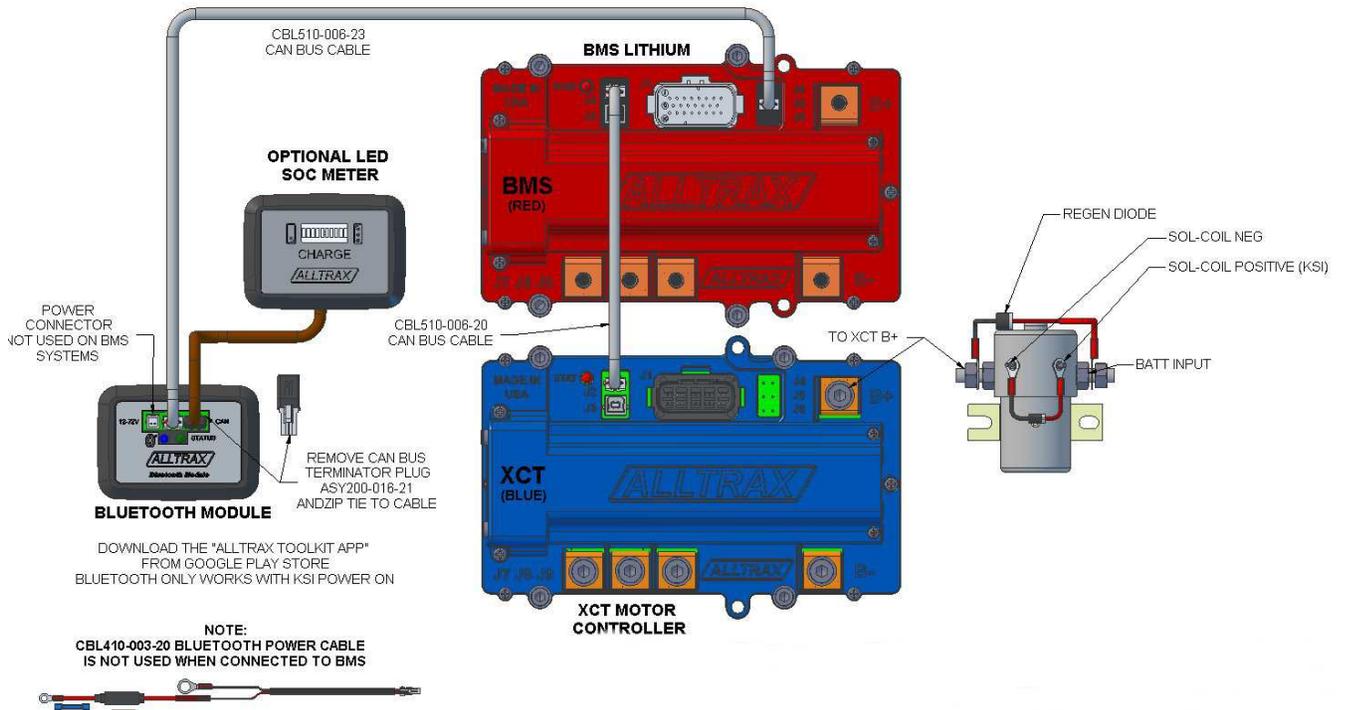
BLUETOOTH MODULE WITH ALLTRAX XCT SYSTEM



2) **BMS LITHIUM based battery systems with XCT – See SECTION 3:**

The Bluetooth Module will connect to the ALLTRAX BMS modules "second CAN BUS" connector in the J5 connector well. The J2 CAN BUS connector goes to the XCT controller for operational control, J5 CAN BUS is for smart devices plugged in downstream such as the Alltrax LED SOC display or BLUETOOTH MODULE.

BLUETOOTH MODULE WITH ALLTRAX XCT+BMS LITHIUM SYSTEM



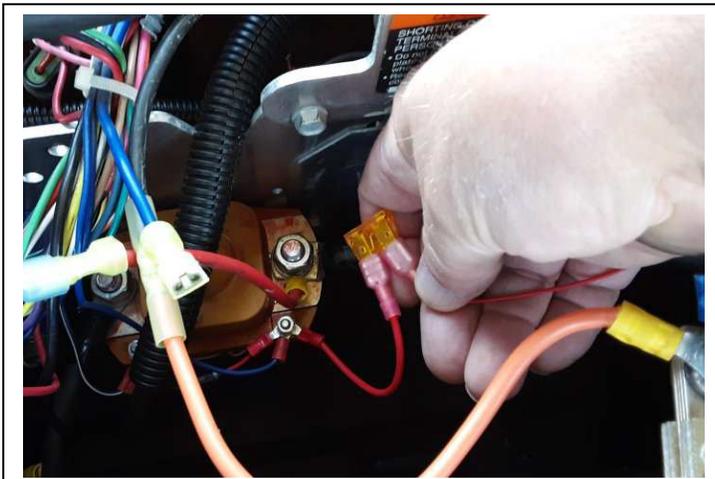
## 2. XCT ONLY (Lead based battery system)

### See Doc102-047-01 BLUETOOTH MODULE Wiring Diagram

Take you POWER CABLE PN#CBL410-003-20 with the ATC attached 5Amp fuse, and CAN BUS cable CBL510-006-23:



1. Set the KEY SWITCH TO OFF
2. Set TOW/RUN switch to OFF
3. .Connect the 2-pin power cable with ATC 3 or 5Amp fuse holder as follows:
  - a. Positive RED power wire of FUSE HOLDER to Solenoid coil positive terminal. This is KEY SWITCH power that will turn on the Bluetooth Module. See picture below.
  - b. Connect the BLACK Negative power wire to the XCT NEG B- terminal. It should be the first terminal on the bolt itself as the main large B- Battery wire is against and touching the XCT B- flat copper terminal. The bolt with Bluetooth NEG wire then screws into the B- terminal. This is critical or the resistance if this small terminal is sandwiched between the main B- cable and the XCT terminal.



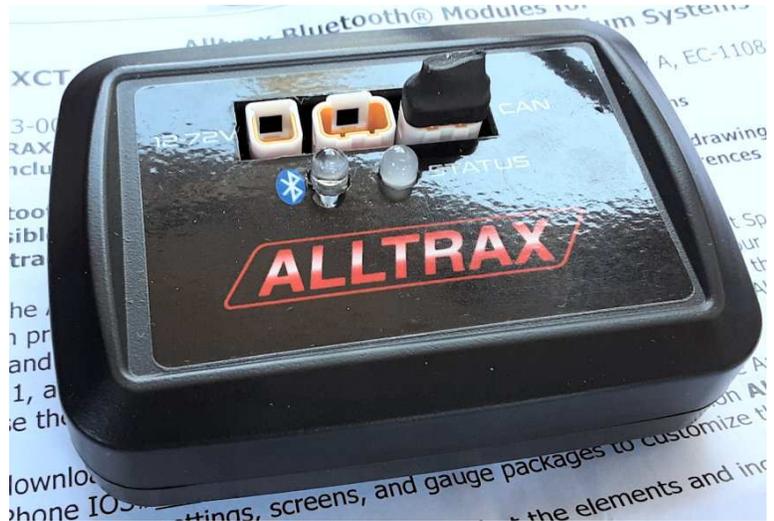
FUSED RED wire to SOL COIL POS (KSI)



BLK wire B- or XCT B-

**XCT INSTALL CONTINUED:**

4. Install CAN BUS TERMINATOR PN# ASY200-016-21, a "terminate plug" is used for the last CAN BUS connection and plugs into the right side connector until it clicks.



5. Connect the 2-pin power cable to the BLUETOOTH MODULE power input. The battery pack is 24 through 72V battery systems (90V max).
6. Connect the CAN bus connector to the XCT CAN J2 (by the USB plug) – ensure it fully seats and clicks in.
7. Connect the other end of the CAN cable to the Blue Tooth open CAN connector in the middle.



8. Find a location under the seat – fender, or side panel to mount the BLUETOOTH MODULE. Vertical is preferred so water can drain away from the unit.
9. Affix the included hook and loop (VELCRO®) to the back of the module.
10. Clean a small area using rubbing alcohol or plastics cleaner ensure the area is clean and dry.
11. Peel off the tape off the VELCRO® and affix to the chosen location.
12. Use the zip ties to route the wires AWAY FROM HIGH POWER WIRES! If you route the BLE power cable or communication CAN cable along the motor controller or battery wires, the electrical noise will cause havoc with the BLUETOOTH MODULE and may not communicate at all.
13. Set TOW/RUN switch to ON
14. Set KEY SWICTH switch to ON



## **PROCEED TO: SOFTWARE section**

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### **3. BMS + XCT LITHIUM SYSTEM (Alltrax Lithium battery system)**

#### **See Doc102-047-01 BLUETOOTH MODULE Wiring Diagram**

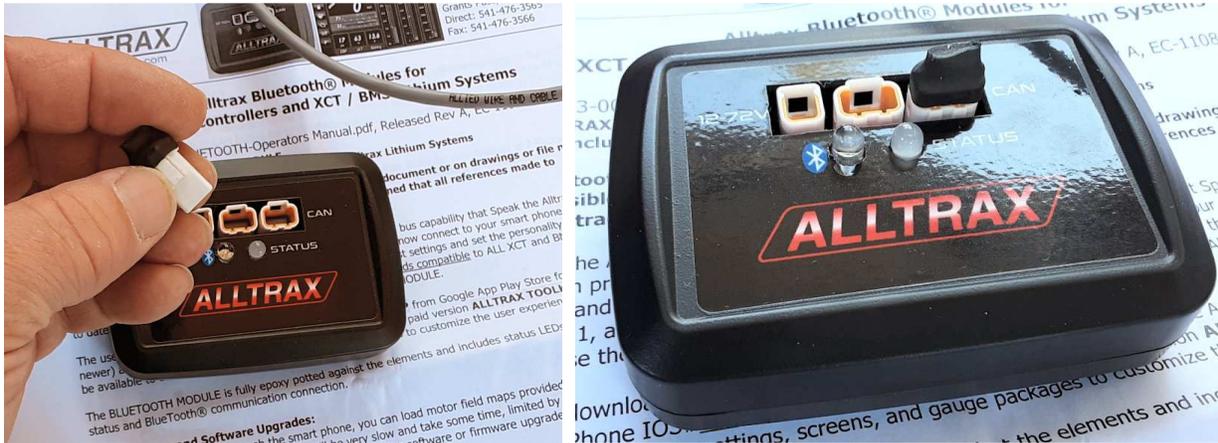
The 2 pin power connector that came with your BLUETOOTH MODULE is NOT used. The BMS provides the logic power to the BLUETOOTH MODULE. It is suggested to store the power cable CBL410-003-20 in a safe place for future use on XCT only systems.

1. Set the KEY SWICTH TO OFF
2. Set TOW/RUN switch to OFF
3. Set the BMS Circuit Breaker to OFF

#### 4. BMS Lithium System with BLE:

The BMS Lithium Battery Management System has 2 CAN BUS connectors, one for communicating with the XCT motor controller (BMS CAN connector J2 next to the USB port J3) and a second "smart device" CAN BUS connector in the J5 well. The BLUETOOTH Module will plug into the J5 SMART DEVICE - CAN BUS connector.

1. If you ARE using the ALLTRAX SOC Battery fuel gauge, it will plug into the right side connector.
2. If you are NOT using the ALLTRAX SOC Battery fuel gauge - install CAN BUS TERMINATOR PN# ASY200-016-21, a "terminate plug" for the last CAN BUS connection goes into the right side connector until it clicks.



3. Connect the BLE-CAN bus connector to the BMS CAN J5 – ensure it fully seats and clicks in.
4. Connect the other end of the CAN cable to the BLE Blue Tooth open middle CAN connector.



Connect SOC Fuel Gauge to RIGHT CAN BUS connector

Connect to the BMS-J5 CAN BUS connector



If you have the Alltrax SOC fuel gauge meter plugged into the BMS J5, remove it from the BMS. Then - on the BLUETOOTH MODULE, remove the CAN TERMINATOR PLUG by pressing the TAB, and then plug the SOC Fuel Gauge CAN cable into the RIGHT SIDE connector of the Bluetooth Module.



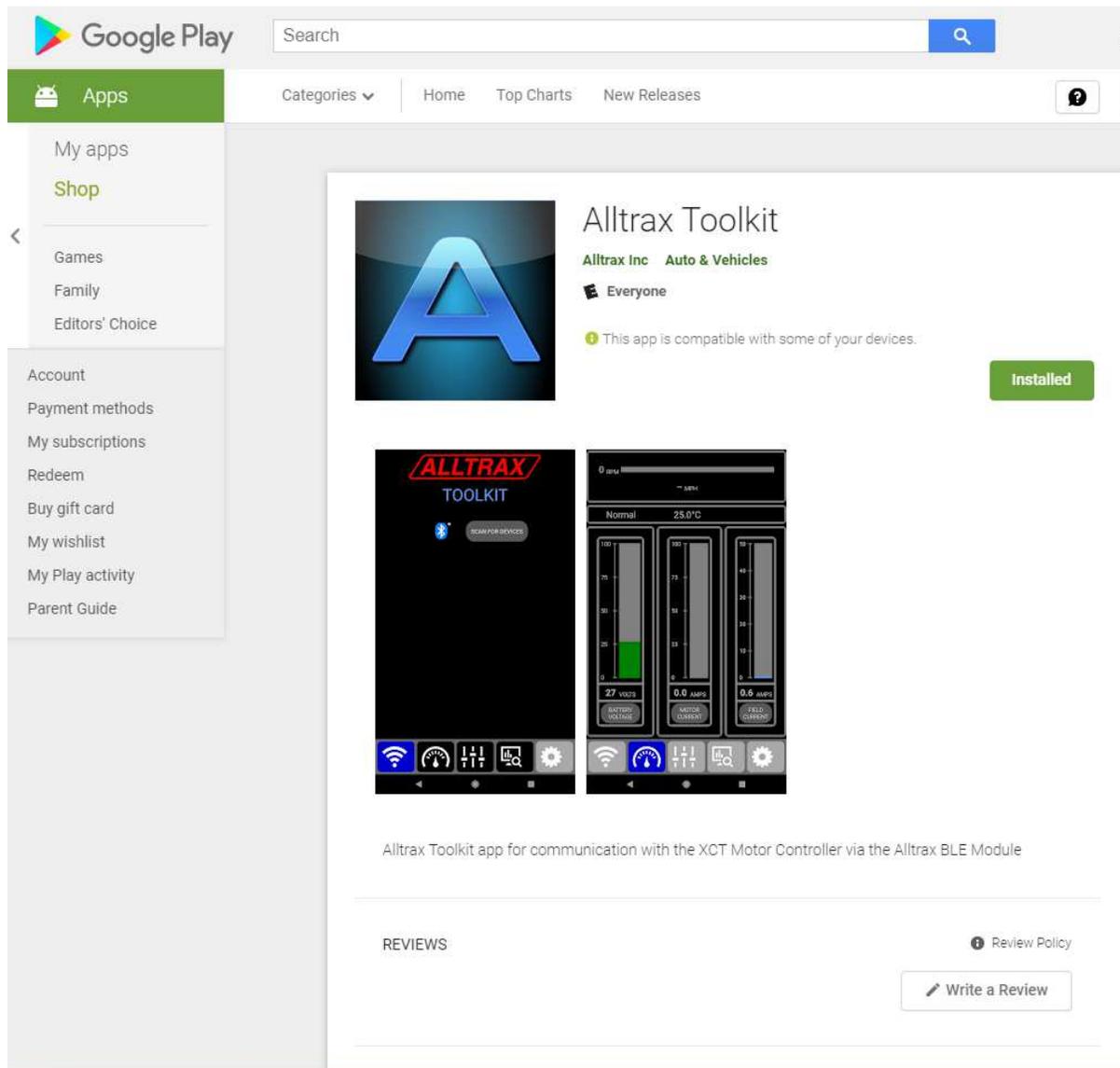
5. Set the BMS Circuit Breaker to ON
6. Set TOW/RUN switch to ON
7. Set KEY SWICTH switch to ON

## 5. SOFTWARE

### First step for EITHER installation, Download the APP.

Using your smart phone, download the APP from the Google Play Store for your Android or I-Phone, ALLTRAX TOOLKIT APP and install and accept the terms and conditions. Then proceed to the installation section that pertains to your setup.

1. On your smart phone, download and install the ALLTRAX TOOLKITKIT APP.



**SOFTWARE Continued:**

Launch the Alltrax Toolkit Icon:

2. It will begin scanning for devices. The Alltrax BLUETOOTH MODULE should appear with a serial number.
3. Press CONNECT
  - a) Once you connect – you can provide a “NICK NAME” to each controller you connect to. Say for example “DADS CAR” and “MOMS CAR” or “YDRE-25”, “BMS-CCP60”, which ever you prefer to associate that Bluetooth ID#NAME to that car for multi car BLUETOOTH MODULES. This will save these settings to your phone for later use.



4. Each screen can be viewed by touching the icon below, or swiping to from right to left.

**Programming and Software or Firmware Upgrades:**

With internet connection to the smart phone, you can load motor field maps provided by Alltrax, but controller software upgrades will be very slow and take some time, limited by the Bluetooth® Bandwidth. It would be preferred to do any upgrades using a laptop and USB cable as a high speed connection.

1. When making changes to the settings, make sure to touch SET to instruct the APP to Program the controller. If you do not touch SET the settings will be lost once you disconnect.
2. The MONITOR TAB allows you to record data. This can be useful in trouble shooting or checking motor controller and motor performance, or the Lithium system when connected to the BMS. If you have the LITHIUM SYSTEM with BMS, there will be TWO monitor tabs, one for the XCT and one for the BMS. Swipe or touch the screen monitor tab you wish to view.



Monitor files can be emailed to Alltrax for troubleshooting, or crunch the data yourself using Microsoft® Excell®

Once you have your settings configured – remember to PRESS SET (shown in the upper middle picture above) to program the controller and you’re all done!

If you have any feedback or comments for these instructions, please email [info@alltraxinc.com](mailto:info@alltraxinc.com) subject line BLUETOOTH SUGGESTIONS as we value our customers input, we make feature rich performance products based on our customers input!

**Made in USA**

**This module contains FCC ID# A8TBM71S2, BTLE module as tested FCC Part 15B, Test Report, ALNC0001.**