TRINITY
LCD ESC Programming Box

Instruction Manual

NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, LLC. For up-to-date product literature, visit www.horizonhobby.com or towerhobbies.com and click on the support or resources tab for this product.

MEANING OF SPECIAL LANGUAGE

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

WARNING: Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.

CAUTION: Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.

NOTICE: Procedures, which if not properly followed, create a possibility of physical property damage AND little or no possibility of injury.

⚠ **WARNING:** Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. Do not use with incompatible components or alter this product in any way outside of the instructions provided by Horizon Hobby, LLC. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

Age Recommendation: Not for children under 14 years. This is not a toy.

NOTICE: This product is only intended for use with unmanned, hobby-grade, remote-controlled vehicles and aircraft. Horizon Hobby disclaims all liability outside of the intended purpose and will not provide warranty service related thereto.

Specifications

Dimensions (L x W x H)	105.6mm (Length) mm x 59mm (Width) x 24.4mm (Including wheel height)
Weight	85g
Input Voltage	DC 5V-12.6V

Set the Parameters of the ESC as an Independent Device

- **Navigation Wheel:** Select the target menu by rotating the wheel up and down, press the wheel to enter the item.
- **Save:** Save button, to save parameter settings.
- **Back/Cancel:** Return button is used to return to the previous menu. If you press and hold this button for about 2 seconds, you will be returned back to the home page.
- **ESC (S + -):** This interface is used to connect to the programming interface of the ESC.

Notice: Different types of ESCs may have different programming interfaces. For example, some ESCs have an independent programming port, some ESCs share the interface with the fan, and some ESCs have a throttle signal line. Please check the manual of the ESC and use the correct programming interface to connect with the program box.

- 5-12.6V (+ -): The power supply interface of the program box. Please use an independent battery or UBEC supplies power to the program box from

this interface if the programming interface of the ESC has no voltage output, please refer to the ESC manual). PLEASE NOTE: DO NOT SUPPLY POWER TO PROGRAM BOX UNLESS THE ESC INSTRUCTIONS STATES TO SUPPLY PROGRAM BOX WITH EXTERNAL POWER!!!

- **TYPE-C:** Connect the program box to a computer.
- **Battery Checker:** This interface is connected to the balance charging plug of the battery pack and is also used to detect the overall voltage of the battery pack and the individual voltage of each cell.

Notice: Please pay attention to the wiring direction to avoid damage to the equipment; The pin pitch of this interface is 2.54mm, and is consistent with XH, EH, HP/PQ standards. The battery balance plug can be directly inserted into this interface. However, some battery balancing charging plugs may have a different pin pitch and cannot be directly connected.

Set the Parameters of the ESC as an Independent Device

1. Determine the programming interface of the ESC (check the ESC manual) and use the corresponding connection method.
   - The ESC has an independent programming interface: use a programming cable (JR/DuPont connectors at both ends) to connect the programming port of the ESC to the "ESC" interface on the program box.
   - The programming interface of the ESC is shared with the fan interface: take off the fan plug of the ESC and use the programming cable (JR/DuPont connectors at both ends) to connect the fan interface of the ESC to the "ESC" interface on the program box.
   - The programming port for the ESC is the throttle cable: pull out the ESC cable from the receiver and insert it into the "ESC" socket of the program box.
2. Determine whether the programming interface of the ESC has voltage output, and if the program box needs

a separate power supply (check the ESC manual). The majority of Trinity ESCs have voltage output equipped. This does not require an external power source. However, there are also a few older ESCs whose programming interface does not have voltage output. In that case, you would need to use an independent battery or UBEC on the "5-12.6V (+ -)" interface of the program box to power the device.

3. Connect the battery to the ESC and turn on the ESC switch (if there is a switch). The program box will display the homepage interface. Select the corresponding function menu according to your needs.

Computer USB Connection (WINDOWS ONLY), connect the ESC to a computer for parameter setting and firmware update

Connect the program box to the ESC according to the connection method introduced in the points above. Next, connect the program box to the computer using a USB cable. Open the Trinity Link application software on the computer and connect the ESC to a battery. Finally, turn on

the ESC switch (if any), and the Trinity Link software on the computer can establish a connection with the ESC. Establish parameter settings and firmware upgrades on the computer. (Trinity link software can be downloaded from Trinity official website, https://www.teamtrinity.com)

As an OTA Wireless module, set parameters, update firmware, and read data for ESCs

1. Connect the ESC to the program box according to the correct connection method (as described in the points above).
2. Download the official Trinity Link App on the smart device. For iOS, search for Trinity directly in the App Store; for Android, search for Trinity in Google Play, or download it from the Trinity official website (https://www.teamtrinity.com).
3. Power on the ESC, and open the app. When you enter the app for the first time, you will be prompted to choose wireless connection or WiFi connection. Here, choose wireless connection. If you want to switch

to wireless connection after using WiFi connection, please click "Select Connection Method" in the "System Settings" to change the settings. Click the ESC logo on the upper right-hand corner of the app. The wireless devices that can be connected will pop up. Click the wireless name inside the program box to connect (wireless factory default name: TRI_BLE****, factory default password: 888888). After the connection is successful, you can make parameter adjustments, firmware update, data reading, and other operations on the connected ESC.

As a battery voltage detector (Monitor), measure and display the overall voltage of the battery pack and the voltage of the single cell

Measuring range: 2-8S Li-Polymer/Li-Lon/Li-Fe
Measurement accuracy: ±0.1V
How to use: Insert the battery balancing plug into the "BATTERY CHECK" port of the program box separately (the negative pole of the battery balance port corresponds to the negative pole symbol on the shell of the program box), as shown in the figure, after the battery is connected, the program box will automatically display the total battery voltage and the voltage of each cell.

⚠ **CAUTION:** When detecting the battery voltage, please do not connect the ESC and USB port at the same time. DUAL POWER CONNECTIONS WILL CAUSE DAMAGE TO THIS DEVICE OR CONNECTED DEVICES.

Introduction to menu functions

- **Parameter Settings:** Click to view and set the ESC parameters.
- **Data Record:** Click to view the recorded data such as "maximum temperature of ESC", "maximum temperature of motor", "minimum voltage of battery" and "maximum rpm of motor" recorded by the ESC.
- **Notice:** The ESC needs to support the data recording function in order to be viewed.
- **Mode Setting:**
  1. Profile switching: Refers to switching the application mode (profile) of the ESC, suitable for ESCs with multiple application modes.
  2. Import setup file: This is the sharing function for settings. Import the setting file of a certain ESC stored in the program box to another ESC of the same model. Use the scroll button to select and click a file to import, view, copy, delete, and

rename. Press and hold the scroll button to delete all files with one click.
  3. Add setup file: This is the function of saving the setting file. Store and name the setting table of the current ESC separately in a file.
- **System Settings:**
  1. Language settings: English/ Chinese/Japanese and other languages are switchable.
  2. Brightness: Set the brightness of the screen.
  3. On/Off Sound: Turn on and off the beeping sound during operation.
  4. Device information: View the version information of the ESC and the program box.
  5. Reset: "Only reset default setting" is to restore the system settings of the program box. "Full recovery" is to restore the system settings and database of the program box.

Introduction to menu functions

Due to the continuous update of the ESC function and the use of the LCD program box, it is recommended to upgrade to the latest firmware of the LCD program box if necessary. There are two methods:

1. Use a USB cable to connect the LCD program box to the computer. Run the Trinity USB Link software. Select "LCD Program Box" under the "Device" menu. On the "Firmware Update" page, select the latest version of the firmware program and click "Upgrade", As shown in Figure 1.
2. Power the LCD program box (it can be powered through the esc programming interface or power supply interface), and open the Trinity Link app on the mobile

phone, click on the connection icon in the upper right corner of the app homepage to connect to the program box via wireless, and then click on:
(Settings-Setting of the wireless Module-Firmware Update) to upgrade the firmware of the program box.

Notice: Trinity USB Link computer software or Trinity Link mobile app can be downloaded from the official website of Trinity Technology:
https://www.teamtrinity.com

Horizon's Terms and Conditions found on our website http://www.horizonhobby.com/content/service-center_render-service-center.

ATTENTION: Horizon service is limited to Product compliant in the country of use and ownership. If received, a non-compliant Product will not be serviced. Further, the sender will be responsible for arranging return shipment of the un-serviced Product, through a carrier of the sender's choice and at the sender's expense. Horizon will hold non-compliant Product for a period of 60 days from notification, after which it will be discarded.

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Warranty and Service Contact Information

Country of Purchase	Horizon Hobby	Contact Information	Address
United States of America	Horizon Service Center (Repairs and Repair Requests)	servicecenter.horizonhobby.com/RequestForm/	2904 Research Rd. Champaign, Illinois 61822 USA
	Horizon Product Support (Product Technical Assistance)	productsupport@horizonhobby.com 877-504-0233	
	Sales	websales@horizonhobby.com 800-338-4639	

FCC Information

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and/or antenna and your body (excluding fingers, hands, wrists, ankles and feet). This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Supplier's Declaration of Conformity
Trinity LCD ESC Programming Box (TRI-2020):

FC This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

⚠ **CAUTION:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment & receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: The Grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. such modifications could void the user's authority to operate the equipment.
The device has been evaluated to meet general RF exposure requirement. To maintain compliance with FCC's RF exposure guidelines, the distance must be at least 20 cm between the radiator and your body, and fully supported by the operating and installation

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Email: compliance@horizonhobby.com | HorizonHobby.com

IC Information

CAN ICES-3 (B)/NMB-3(B)
This device contains license-exempt transmitter(s)/receivers(s) that comply with Innovation, Science, and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following 2 conditions:
1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

The device has been evaluated to meet general RF exposure requirement. To maintain compliance with RSS-102 — Radio Frequency (RF) Exposure guidelines, this equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

CAN ICES-3 (B)/NMB-3(B)
Cet appareil contient des émetteurs/récepteurs exempts de licence qui sont conformes aux normes CNR exemptes de licence d'Innovation, Sciences et Développement économique Canada. Son fonctionnement est assujetti aux deux conditions suivantes :
(1)Cet appareil ne doit pas causer d'interférences.
(2)Cet appareil doit accepter toute interférence, y compris celles qui peuvent entraîner un fonctionnement indésirable de l'appareil.

le dispositif a été évalué à répondre général rf exposition exigence.pour maintenir la conformité avec les directives d'exposition du RSS-102-Radio Fréquence (RF). ce matériel doit être installé et exploité à une distance minimale de 20 cm entre le radiateur et votre corps.

1-Year Limited Warranty

What this Warranty Covers—Horizon Hobby, LLC, (Horizon) warrants to the original purchaser that the product purchased (the "Product") will be free from defects in materials and workmanship for a period of 1 year from the date of purchase.

What is Not Covered—This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by anyone other than a Horizon Hobby authorized service center, (v) Product not purchased from an authorized Horizon dealer, (vi) Product not compliant with applicable technical regulations, or (vii) use that violates any applicable laws, rules, or regulations. OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

Purchaser's Remedy—Horizon's sole obligation and purchaser's sole and exclusive remedy shall be that Horizon will, at its option, either (i) service, or (ii) replace, any Product determined by Horizon to be defective. Horizon reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Horizon. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY.

Limitation of Liability—HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF HORIZON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

Law—These terms are governed by Illinois law (without regard to conflict of law principals). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Horizon reserves the right to change or modify this warranty at any time without notice.

WARRANTY SERVICES
Questions, Assistance, and Services—Your local hobby

store and/or place of purchase cannot provide warranty support or service. Once assembly, setup or use of the Product has been started, you must contact your local distributor or Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please visit our website at www.horizonhobby.com, submit a Product Support Inquiry, or call the toll free telephone number referenced in the Warranty and Service Contact Information section to speak with a Product Support representative.

Inspection or Services—If this Product needs to be inspected or serviced and is compliant in the country you live and use the Product in, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Service Request is available at http://www.horizonhobby.com/content/service-center_render-service-center. If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along with instructions for submitting your product for service. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon, please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

NOTICE: Do not ship LiPo batteries to Horizon. If you have any issue with a LiPo battery, please contact the appropriate Horizon Product Support office.

Warranty Requirements—For Warranty consideration, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be serviced or replaced free of charge. Service or replacement decisions are at the sole discretion of Horizon.

Non-Warranty Service—Should your service not be covered by warranty, service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashier's checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to