RUIZHI 189

RUIZHI 40A 2-4S Brushless ESC User Manual

Model: 189 | Brand: RUIZHI

1. Introduction

This manual provides comprehensive instructions for the RUIZHI 40A 2-4S Brushless Electronic Speed Controller (ESC). This ESC is designed for use in various remote-controlled (RC) applications, including fixed-wing aircraft, drones, helicopters, and quadcopters. Please read this manual thoroughly before installation and operation to ensure proper function and safety.

2. Product Features

- **High-Quality Construction:** Manufactured with high-quality materials for superior conductivity and durability.
- **Optimized Software:** Features specially optimized software for excellent compatibility with various brushless motors, including disk-type motors.
- **Multi-Rotor Core Program:** Incorporates a dedicated multi-rotor controller core program to meet diverse functional requirements.
- **Adjustable Timing:** Motor timing can be adjusted to suit different brushless motor types.
- **Integrated Protection:** Includes low voltage cut-off protection, overheat protection, and throttle signal loss protection.
- **Stable Signal Transmission:** The throttle signal cable utilizes a twisted pair design, effectively reducing crosstalk during signal transmission for more stable flight.

3. Specifications

Feature	Specification
Continuous Current	40A
Burst Current (<10s)	55A
Power Supply	2-4S LiPo (Lithium Polymer) battery

Feature	Specification
BEC Output	5V@3A (Linear Regulator Mode)
Dimensions (approx.)	68 x 25 x 8 mm
Max Speed (2-pole motor)	210,000 RPM
Max Speed (6-pole motor)	70,000 RPM
Max Speed (12-pole motor)	35,000 RPM
UPC	763762837665

Figure 1: RUIZHI 40A ESC with key dimensions indicated. The overall length is approximately 76mm, width 37mm, and height 8mm. The battery wires are about 97mm long, motor wires 85mm, and the signal wire 250mm.

4. Setup

Proper setup is crucial for the safe and efficient operation of your ESC. Follow these general steps:

1. **Motor Connection:** Connect the three motor wires from the ESC to the three wires of your brushless motor. The order of connection may affect motor rotation direction. If the motor spins in the wrong direction, swap any two of the three motor wires.
2. **Receiver/Flight Controller Connection:** Connect the signal cable (usually a three-wire servo connector: signal, positive, negative) from the ESC to the throttle channel of your RC receiver or flight controller. Ensure correct polarity.
3. **Battery Connection:** Connect the battery connector (red for positive, black for negative) from the ESC to your LiPo battery. Ensure correct polarity to prevent damage.
4. **Throttle Calibration (Recommended):**
    - Turn on your RC transmitter and set the throttle stick to its maximum position.
    - Connect the battery to the ESC. The ESC will emit a series of beeps.
    - Once the beeps indicate the maximum throttle has been recognized, move the throttle stick to its minimum position.
    - The ESC will emit another series of beeps, confirming the minimum throttle has been set.
    - Disconnect and reconnect the battery to complete the calibration.

Figure 2: Overview of the RUIZHI 40A ESC, showing the main body, battery input wires (red and black), motor output wires (three black wires), and the signal wire with a servo connector.

Figure 3: A close-up view of the three motor output wires from the ESC, each labeled '16AWG 200°C'. These wires connect directly to the brushless motor.

5. Operating Instructions

After successful setup and calibration, follow these guidelines for operation:

1. **Pre-Flight Check:** Always perform a pre-flight check to ensure all connections are secure, the battery is charged, and the motor responds correctly to throttle input.
2. **Initial Power-Up:** Connect the battery to the ESC. The ESC will initialize and emit a series of beeps. Wait for the initialization sequence to complete before operating.
3. **Throttle Control:** Gradually increase the throttle stick on your transmitter to control motor speed. Avoid sudden, rapid throttle changes, especially during initial flights.
4. **Monitoring:** Pay attention to any unusual sounds or smells from the ESC or motor during operation. If anything seems abnormal, immediately cut power.
5. **Post-Operation:** After use, disconnect the battery from the ESC first. Allow the ESC and motor to cool down before handling.

Figure 4: A hand holding the RUIZHI 40A ESC, illustrating its compact size and ease of handling for installation into an RC model.

6. Maintenance

The RUIZHI 40A ESC is designed for durability, but proper maintenance can extend its lifespan:

- **Keep Clean:** Regularly inspect the ESC for dirt, dust, or debris. Clean gently with a soft brush or compressed air. Avoid using liquids.
- **Inspect Connections:** Periodically check all wire connections for signs of wear, corrosion, or loose contacts. Ensure solder joints are solid.
- **Temperature Management:** Ensure adequate airflow around the ESC during operation to prevent overheating. Avoid enclosing it in tight spaces without ventilation.
- **Storage:** Store the ESC in a dry, cool environment away from direct sunlight and extreme temperatures when not in use.

7. Troubleshooting

If you encounter issues with your RUIZHI 40A ESC, consider the following:

- **Motor Not Spinning:**
  - Check all wire connections (motor, battery, receiver).
  - Ensure the battery is charged.
  - Verify throttle calibration.
  - Confirm the motor is not jammed or damaged.
- **Erratic Motor Behavior:**
  - Re-calibrate the throttle range.
  - Check for interference with the signal cable.
  - Inspect motor wires for loose connections or damage.
- **ESC Overheating:**
  - Ensure proper ventilation around the ESC.
  - Check if the motor is drawing excessive current (e.g., due to an oversized propeller or mechanical binding).
  - Verify the battery voltage is within the 2-4S LiPo range.
- **No Power/LED Indicator Off:**
  - Check battery connection and battery charge.
  - Inspect for any visible damage to the ESC or wires.

8. Safety Information

Operating RC electronics requires adherence to safety precautions:

- **Battery Safety:** Always use LiPo batteries safely. Do not overcharge, over-discharge, or puncture them. Store in a fire-safe location.
- **Propeller Safety:** Always remove propellers from motors before performing any setup, calibration, or maintenance to prevent accidental injury.
- **Correct Polarity:** Ensure all connections, especially battery connections, are made with correct polarity (positive to positive, negative to negative). Incorrect polarity can cause severe damage to the ESC and battery.
- **Insulation:** Ensure all exposed wires and solder joints are properly insulated to prevent short circuits.
- **Environment:** Operate RC models in open areas, away from people, animals, and obstacles.
- **Water and Moisture:** Keep the ESC away from water and moisture unless it is specifically rated as waterproof.

9. Package Contents

The package for the RUIZHI 40A 2-4S Brushless ESC typically includes:

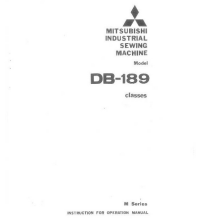
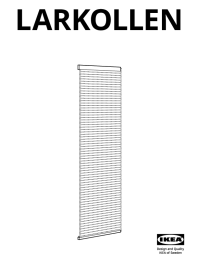
- 1 x RUIZHI 40A Brushless ESC

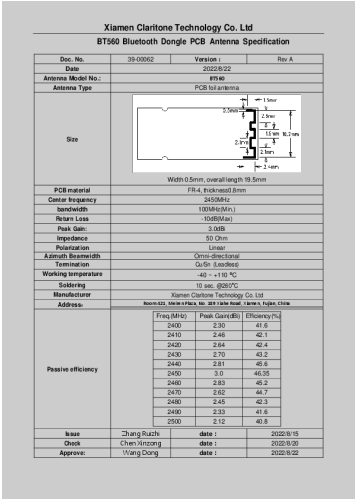
Figure 5: A detailed view of the RUIZHI 40A ESC, highlighting its main components and connections. Insets show a close-up of the servo connector and the motor wire ends.

10. Warranty and Support

For any questions, technical assistance, or support regarding your RUIZHI 40A ESC, please contact the seller or manufacturer directly. Refer to your purchase documentation for specific warranty terms and contact information.

Related Documents - 189

	[Conair GMTL30 MetalCraft High Performance Metal Trimmer - User Manual and Instructions] User manual for the Conair GMTL30 MetalCraft High Performance Metal Trimmer. Provides detailed instructions on operation, charging, maintenance, safety precautions, troubleshooting, and warranty information for this grooming device.
	[Mitsubishi DB-189 Industrial Sewing Machine Operation Manual] Comprehensive operation manual for the Mitsubishi DB-189 series industrial sewing machine, covering parts identification, setup, threading, adjustments, maintenance, and specifications.
	[IKEA LARKOLLEN Rail Assembly Instructions] Step-by-step guide for assembling the IKEA LARKOLLEN rail system for sliding doors. Includes part identification and assembly procedures.
	[Takstar MS-189 (Upgraded Version) Conference Microphone User Manual] User manual for the Takstar MS-189 (Upgraded Version) conference microphone, detailing features, specifications, usage instructions, safety precautions, and warranty information.
	[VEVOR FG-189 Aquarium Light User Manual] Comprehensive user manual for the VEVOR FG-189 Aquarium Light, covering features, installation, operation, safety, and disposal. Learn how to set up and use your LED aquarium light for optimal plant and fish health.
	[PRUNUS J-189 Radio User Manual and Specifications] Comprehensive user manual for the PRUNUS J-189 Radio, covering setup, operation, features like FM/AM radio, MP3 playback via USB/TF card, Bluetooth, AUX, LED flashlight, and customer support. Includes product specifications and precautions.



Xiamen Claritone Technology Co. Ltd

BT560 Bluetooth Dongle PCB Antenna Specification

Doc. No.	39-00062	Version :	Rev A
Date	2022/8/22		
Antenna Model No.:	BT560		
Antenna Type	PCB foil antenna		
Size	Width 0.5mm, overall length 19.5mm		
PCB material	FR-4, thickness0.8mm		
Center frequency	2450MHz		
bandwidth	100MHz(Min.)		
Return Loss	-10dB(Max)		
Peak Gain:	3.0dB		
Impedance	50 Ohm		
Polarization	Linear		
Azimuth Beamwidth	Omni-directional		
Termination	Cu/Sn (Leadless)		
Working temperature	-40 ~ +110 ℃		
Soldering	10 sec. @260°C		
Manufacturer	Xiamen Claritone Technology Co. Ltd		
Address:	Room 421, Meiren Plaza, No. 189 Xiahe Road, Xiamen, Fujian, China		

Passive efficiency

Freq.(MHz)	Peak Gain(dBi)	Efficiency(%)
2400	2.30	41.6
2410	2.46	42.1
2420	2.64	42.4
2430	2.70	43.2
2440	2.81	45.6
2450	3.0	46.35
2460	2.83	45.2
2470	2.62	44.7
2480	2.45	42.3
2490	2.33	41.6
2500	2.12	40.8

Issue	Zhang Ruizhi	date :	2022/8/15
Check	Chen Xinzong	date :	2022/8/20
Approve:	Wang Dong	date :	2022/8/22

[pdf] Specifications

Wang David Antenna Spec OROSOUND ORO3TILDE Tilde Dongle 2AOOA 2AOOAORO3TILDE oro3tilde

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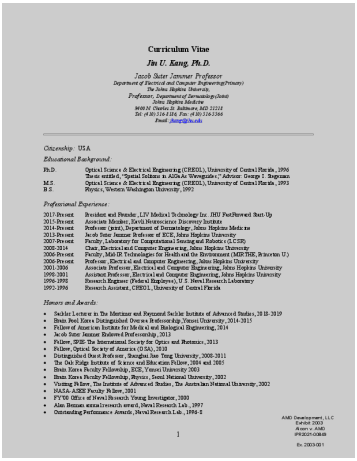

Curriculum Vitae

Jin U. Kang, Ph.D.

Jacob Suter Jammer Professor

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Educational Background:

Ph.D. Optical Science & Electrical Engineering (CREOL), University of Central Florida , 1996
Thesis entitled, "Spatial Soliton in AlGaAs Waveguides;" Advisor: George I. Stegeman
M.S. Optical Science & Electrical Engineering (CREOL), University of Central Florida , 1993
B.S Physics, Western Washington University, 1992

Professional Experience:

2017-Present President and Founder, LIV Medical Technology Inc. IMD Pacifier and Stent Up
2015-Present Associate Member, Hwa Medical Science University Institute
2014-Present Professor (joint), Department of Dermatology, Johns Hopkins Medicine
2013-Present Jacob Suter Jammer Professor of ECE, Johns Hopkins University
2007-Present Faculty, Laboratory for Computational Sensing and Robotics (LCSR)
2008-2014 Chair, Electrical and Computer Engineering, Johns Hopkins University
2006-Present Faculty, Medical Technologies for Health and the Environment (MEDTME, Rowan U.)
2006-Present Professor, Electrical and Computer Engineering, Johns Hopkins University
2001-2006 Associate Professor, Electrical and Computer Engineering, Johns Hopkins University
1999-2001 Assistant Professor, Electrical and Computer Engineering, Johns Hopkins University
1996-1999 Research Engineer (Federal Employee), U.S. Naval Research Laboratory
1992-1996 Research Assistant, CREOL, University of Central Florida

Honors and Awards:

- Sackler Lecturer in The Materials and Perceived Sackler Institute of Advanced Studies, 2018-2019
- Brain Pool Korea Distinguished Overseas Professorship, Yonsei University, 2014-2015
- Fellow of American Institute for Medical and Biological Engineering, 2014
- Jacob Suter Jammer Endowed Professorship, 2013
- Fellow, SPIE-The International Society for Optics and Photonics, 2013
- Fellow, Optical Society of America (OSA), 2010
- Distinguished Guest Professor, Shanghai Jiao Tong University, 2008-2011
- The Dirk Ruiter Institute of Science and Education Fellow, 2004 and 2005
- Brain Korea Faculty Fellowship, ECE, Yonsei University 2003
- Brain Korea Faculty Fellowship, Physics , Seoul National University, 2002
- Visiting Fellow, The Institute of Advanced Studies, The Australian National University, 2002
- NASA-ASEE Faculty Fellow, 2001
- FY'00 Office of Naval Research Young Investigator , 2000
- Alan Berman annual research award, Naval Research Lab , 1997
- Outstanding Performance Awards, Naval Research Lab , 1996-8

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Curriculum Vitae Jin U. Kang, Ph.D. Jacob Suter Jammer Professor Department of Electrical and Comput ... al Spatial Soliton Dragging and All-Optical Switching in AlGaAs Waveguides, Optics Lett., Vol. 21, **189**-191, 1996 1995 180.J. S. Aitchison, Jin. U. Kang, G. I. Stegeman, Signal Gain due to a polari...

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