SPEKTRUM®

AR636B User Guide

AR636B Bedienungsanleitung

Guide de L'utilisateur - AR636B

AR636B Guidea Dell'utente

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 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 a 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 attempt disassembly, use with incompatible components or augment product in any way without the approval of 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.

⚠ **WARNING AGAINST COUNTERFEIT PRODUCTS**

Thank you for purchasing a genuine Spektrum product. Always purchase from a Horizon Hobby, LLC authorized dealer to ensure authentic high-quality Spektrum product. Horizon Hobby, LLC disclaims all support and warranty with regards, but not limited to, compatibility and performance of counterfeit products or products claiming compatibility with DSM or Spektrum.

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.

WARRANTY REGISTRATION

Visit www.spektrumrc.com/registration today to register your product.

AR636B Instruction Manual

The AR636B full range 6-channel receiver features DSMX® technology and is compatible with all Spektrum™ transmitters that support DSM2® and DSMX technology.

Features

- 6-Channel Full Range Receiver with integrated AS3X® technology
- Programmable from mobile devices or PC
- Three gyro modes: Off, Rate Mode and Heading Hold
- Assignable channel outputs

Applications

Sport aircraft using up to 6 channels. Not for use in aircraft with full carbon fiber fuselages.

Specifications

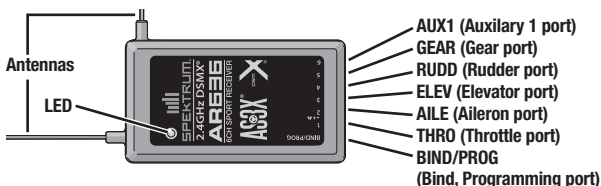Type: DSMX Sport Receiver
Channels: 6
Modulation: DSM2, DSMX
Dimension (WxLxH): .90 x 1.70 x 0.60 in (23.5 x 42.0 x 14.0mm)
Weight: 0.36 oz (10.2 g) main receiver
Input Voltage Range: 3.5–9.6V
Resolution: 2048
Compatibility: All DSM2 and DSMX Aircraft Transmitters and Module Systems

Antennas

LED

AUX1 (Auxilary 1 port)
GEAR (Gear port)
RUDD (Rudder port)
ELEV (Elevator port)
AILE (Aileron port)
THRO (Throttle port)
BIND/PROG (Bind, Programming port)

Binding

The AR636B receiver must be bound to the transmitter before it will operate. Binding is the process of teaching the receiver the specific code of the transmitter so it will only connect to that specific transmitter.

TIP: If you are going to use the AS3X feature, do not connect any servos to the receiver during binding. When you activate AS3X, the Spektrum AS3X Programmer app will show you where to connect the servos.

1. Insert the bind plug in the BIND port on the receiver.
2. Power the receiver through any open channel port. The orange LED on the receiver flashes, indicating the receiver is in bind mode. NEVER power the receiver through a telemetry port.
3. Put the transmitter in bind mode. Binding is complete when the orange LED on the receiver is solid.

4. Remove the bind plug from the BIND/PROG port on the receiver before you power off the transmitter and store it in a convenient place.

NOTICE: Remove the bind plug to prevent the system from entering bind mode the next time the power is turned on.

5. After you set up your model, always rebind the transmitter and receiver to set the desired failsafe positions.

Antenna Polarization

For optimum RF link performance it's important that the antennas be mounted in an orientation that allows for the best possible signal reception when the aircraft is in all possible attitudes and positions. This is known as antenna polarization. The antennas should be oriented perpendicular to each other; typically vertical and horizontal and at different angles (see Receiver Installation below).

Using the AR636B Receiver With AS3X

By default, AS3X technology is turned off in AR636B receivers. Before activating AS3X, you will need to properly install the receiver in the aircraft and download the Spektrum Programmer to your mobile device. An interface cable (SPMA3081 sold separately) is required for programming the receiver.

Activating AS3X

1. Bind the transmitter and receiver.
2. Download the Spektrum Programmer from SpektrumRC.com or from your mobile device (iOS or Android).
3. Power on the transmitter and receiver.
4. Open the Spektrum AS3X application.
5. Connect the audio interface cable to the BIND/PROG port of the receiver and the device.
6. Use the application to program the receiver. For instructions on how to use the application, please consult the manual in the application.
7. Press "Update" in the application to save the receiver programming.

Installing the Receiver

1. You can install the receiver under the canopy or in the bottom of the fuselage. The servo pins must point toward the nose or tail of the fuselage.
2. Connect the servo and telemetry leads to the receiver.
3. Use double-sided foam tape to secure the receiver.

Important: Y-Harnesses and Servo Extensions

When using a Y-harness or servo extensions in your installation, it's important to use standard, non-amplified Y-harnesses and servo extensions. Amplified Y-harnesses and servo extensions will cause the servos to operate erratically or not function at all.

Setting the Failsafe Positions

The Receiver features two types of failsafe: SmartSafe and Preset Failsafe.

SmartSafe

SmartSafe™ failsafe is recommended for most aircraft.

When the transmitter and receiver are turned on, the receiver connects to the transmitter and normal control of all channels occurs. If loss of signal occurs, SmartSafe moves the throttle channel to its preset failsafe position (low throttle) that was set during binding. All other channels hold their last position. When the receiver detects signal from the transmitter, normal aircraft operation resumes.

Receiver Power Only

- With SmartSafe technology when the receiver only is turned on (no transmitter signal is present), the throttle channel has no output, to avoid operating or arming the electronic speed control.
- All other channels are driven to their preset failsafe positions set during binding.

Range Testing

Before each flying session and especially with a new model, it is important to perform a range check. All Spektrum aircraft transmitters incorporate a range testing system which, when activated, reduces the output power, allowing a range check.

1. With the model restrained on the ground, stand 30 paces (approximately. 90 feet/28 meters) away from the model.
2. Face the model with the transmitter in your normal flying position and place your transmitter into range check mode.
3. You should have total control of the model with the button depressed at 30 paces (90 feet/28 meters).
4. If control issues exist, contact the appropriate product support department.

Advanced Range Testing

For sophisticated models that have significant conductive material in them, the Advanced range test using a flight log is recommended. The advanced range check will confirm that the internal and remote receivers are operating optimally and that the installation (position of the receivers) is optimized for the specific aircraft. This Advanced Range Check allows the RF performance of each receiver to be evaluated and to optimize the locations of the remote receiver.

  IMPORTANT: If you don't have a telemetry-capable transmitter, you can connect a Flight Log to the BIND/Prog port on the receiver.

1. Standing 30 paces away from the model, face the model with the transmitter in your normal flying position.

2. Put your transmitter in range test mode. Range test mode reduces the power output from the transmitter.

3. Have someone position the model in various orientations (nose up, nose down, nose toward the transmitter, nose away from the transmitter, etc.).

4. Observe the telemetry on your transmitter or STi interface. Note any orientations that cause higher fade or hold values. Perform this step for at least one minute.

5. Re-position any remote receivers as necessary.

Receiver Power System Requirements

Inadequate power systems that are unable to provide the necessary minimum voltage to the receiver during flight have become the number one cause of in-flight failures. Some of the power system components that affect the ability to properly deliver adequate power include:

• Receiver battery pack (number of cells, capacity, cell type, state of charge)

• The ESC's capability to deliver current to the receiver in electric aircraft

• The switch harness, battery leads, servo leads, regulators etc.

The AR636B has a minimum operational voltage of 3.5 volts; it is highly recommended the power system be tested per the guidelines on next page.

Recommended Power System Test Guidelines

If a questionable power system is being used (e.g. small or old battery, ESC that may not have a BEC that will support high-current draw, etc.), it is recommended that a voltmeter be used to perform the following tests.

The Hangar 9® Digital Servo & Rx Current Meter (HAN172) or the Spektrum Flight Log (SPM9540) is the perfect tool to perform the test below.

Plug the voltmeter into an open channel port in the receiver and with the system on, load the control surfaces (apply pressure with your hand) while monitoring the voltage at the receiver. The voltage should remain above 4.8 volts even when all servos are heavily loaded.

⚠ **CAUTION:** When charging Ni-MH batteries, make sure the battery fully charges. Ni-MH batteries charged with peak detection fast chargers have a tendency to false peak (i.e. not fully charge), which could lead to a crash.

How QuickConnect™ Technology Works

• When the receiver voltage drops below 3.5 volts, the system ceases to operate.

• When power is restored the receiver immediately attempts to reconnect.

• If the transmitter was left on, the system reconnects typically in about 4/100 of a second.

QuickConnect with Brownout Detection is designed to allow you to fly safely through most short duration power interruptions, however, the root cause of these interruptions must be corrected before the next flight to prevent a crash.

NOTICE: If a brownout occurs in flight it is vital that the cause of the brownout be determined and corrected.

Flight Log (SPM9540 Optional)

The Flight Log is compatible with the AR636B. The Flight Log displays overall RF link performance as well as the individual internal and external receiver link data. Additionally it displays receiver voltage.

ModelMatch™ Technology

Some Spektrum transmitters offer a patent pending feature called ModelMatch. ModelMatch technology prevents the possibility of operating a model using the wrong model memory, potentially preventing a crash. With ModelMatch, each model memory has its own unique code (GUID) and during the binding process the code is programmed into the receiver. Later, when the system is turned on, the receiver will only connect to the transmitter if the corresponding model memory is programmed on screen.

If at any time you turn on the system and it fails to connect, check to be sure the correct model memory is selected in the transmitter.

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 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.

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

Supplier's Declaration of Conformity
FCC ID: BRWDASRX21

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 and 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.

Horizon Hobby, LLC
2904 Research Rd.,
Champaign, IL 61822
Email: compliance@horizonhobby.com
Web: HorizonHobby.com

Compliance Information for Canada

IC ID: 6157A-AMRX21

CAN ICES-3 (B)/NMB-3(B)

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two 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.

Compliance Information for the European Union

EU Compliance Statement: SPMAR636B

Horizon Hobby, LLC hereby declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive.

A copy of the EU Declaration of Conformity is available online at: http://www.horizonhobby.com/content/support-render-compliance.

Instructions for disposal of WEEE by users in the European Union

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collections point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and make sure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

E328

SPEKTRUM