parkzone®

RADIAN RTF

Instruction Manual

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Horizon Hobby, Inc.
4105 Fieldstone Road
Champaign, IL 61822

Horizon Hobby UK
Units 1-4 Ployters Rd
Staple Tye
Southern Way
Harlow
Essex CM18 7NS
United Kingdom

Horizon Hobby Deutschland GmbH
Otto Hahn Str. 9a
25337 Elmshorn
Germany

parkzone.com
13253

Charge-and-Fly™ Park Flyer

Wingspan: 78.74 in (2 meters)
Length: 44.7 in (1137mm)
Weight w/Battery: 30 oz
Radio: Spektrum DX5e w/AR500 full range receiver
Battery: 11.1V 1300mAh Li-Po
Motor: PKZ 480-size, 960Kv brushless outrunner
ESC: E-flite 30A brushless ESC with Switch-Mode BEC

parkzone®

Radian Instruction Manual

The experience of flying just got better. The ParkZone® Radian™ encompasses all the benefits that ParkZone pilots have known to love. Experience the true essence of flight while quietly gliding on thermals of air—only using the motor to regain altitude, making for much longer flight times than traditional electric aircraft.

This eco-friendly alternative provides less noise for a relaxing day out at your local park or the great outdoors. The Radian is constructed from durable Z-Foam™ for the perfect balance of weight and durability. Its design boasts a large 2-meter wingspan and plug-in wings for easy transportation and storage. The Radian comes equipped with a 480 brushless motor, Spektrum™ DX5e transmitter and AR500 full range receiver for the ultimate soaring experience.

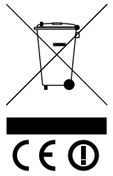
The Radian's large wingspan and elliptical dihedral design improves flight performance and visibility from the ground, while the 3-channel control allows for the ultimate in precision when controlling throttle, rudder, and elevator. With 2.4GHz radio technology, you can fly without worry or risk of interference.

Lightweight Z-Foam construction also ensures durability, making repairs simple and quick. Of course, every ParkZone plane comes out of the box ready to fly.

The Radian delivers the great looks and the immediate gratification ParkZone plane owners have grown to love, while Spektrum's innovative radio technology provides you with the control and reliability required to keep you flying at the greatest heights.

FCC Statement
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.



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 ensure 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.

Simple Soaring

One of the most fascinating and interesting segments of RC flying is Soaring. Finding a thermal and rising without power to unlimited heights is both exhilarating and rewarding. Once the Radian is up to altitude, one will be able to soar for hours relying only on thermal currents and wind to stay aloft. With the current trend towards an eco-friendly society, thermal soaring is free energy and fits well with the environmentally conscious consumer.

Gliders were actually man's first step to powered flight. The Wright brothers used gliders extensively to gather the much needed flight data that allowed them to eventually achieve powered flight. In essence, a glider is defined by the fact it continually descends. NASA space shuttles are in fact gliders by definition. Many of the troop carriers in World War II were also classified as gliders. Often gliders are confused with sailplanes, yet they have completely different functions. A sailplane is similar to a glider, however, there is one primary difference. A sailplane can actually soar—meaning it can rise above its initial launch height.

In the late 1920s and early '30s, Germany led the world with sailplane designs. This was partly due to restrictions placed on them from World War I, when they could not produce powered aircraft. Due to this, some wonderful innovations in sailplane designs were made, and some argue that it was this period that led to our current sailplane designs and theories. With modern sailplane designs, it is not uncommon for full-size sailplanes to stay aloft for up to 8 hours and cover 1000 miles while averaging over 100 mph. Smaller model sailplanes can fly for long periods using similar flight theories that full-size sailplanes use. If you have never experienced thermal soaring with a sailplane before, you're really going to enjoy the Radian's great soaring capabilities and experience the wonderful sport of RC thermal soaring.

What Are Thermals?

The first step to thermal flying is to have a basic understanding of what thermals are and how they work. If you have some concept of how a thermal works it will help you know where to search for them. A thermal is basically rising air. The temperature of the ground is not consistent. Different textures, colors and even weather conditions can cause uneven ground temperature. The warmer ground temperatures heat up and form a warm air bubble. At this stage, the bubble will hug the ground until something breaks the surface tension to release it, much like a soap bubble breaking away from the water's surface. Once tripped, perhaps by a tree line or building, the thermal bubble then rises up, continuing to gain energy until it is fully developed many thousands of feet above. Thermals are typically stronger later in the day because the ground has had more time to generate heat. There are still thermals in the morning and evening, but they behave differently. Morning thermals are very narrow, meaning they have a small diameter, and do not typically go very high (20–400 feet). However, there are many small thermals in the morning, and it is recommended that you learn at this time of the day. Morning thermals are very defined yet are safe, as they typically don't go too high and are not as violent as fully developed thermals. Another benefit is there are many smaller thermals close together in the morning and this will allow you to hop from one thermal to another with ease. Evening thermals are typically large warm air masses, meandering through the sky. They are usually very smooth with soft edges. The middle of the day (noon to 4 p.m.) is when the thermals are at their strongest. The downside is that with every thermal there is also sink. Sink is the surrounding air that is left by the thermal leaving the ground. Typically sink is on the upwind side of the thermal. Sink is created when the warm air has been displaced; colder descending air will fill the area when the warm air has receded. Sink is not necessarily a bad thing—because where there is sink there is also lift close by. The trick is to find lift before you have to land.

How to Catch a Thermal

Always have a planned search pattern when looking for thermals. Even the most seasoned thermal competition pilot will have a search plan before launching. This is one of the basics of thermal flying. If you have a plan, based on good sound thermal logic, chances are you will more than likely find a thermal.

Thermals don't typically stay in the same location for long, so maintaining a consistent pattern is important to ensure as much ground as possible is covered before landing. Many people just fly straight upwind. Working in an "S" pattern will increase the searched surface. Keep working the Radian upwind to cover a lot more sky for the same loss of height. Also, be on the lookout for ground markers. Although thermals cannot be seen, things that identify them can. Wind direction and velocity are great thermal indicators. Often the colder descending air filling in the hole that the thermal created when it left the ground will be a good indication as to where thermals may be. If the wind has a distinct change of direction, there is a good chance of a nearby thermal. The same would apply if the wind shifted to blow from the right. There would be a good chance the thermal would be to the left and slightly behind you. If you feel the wind strength increase, yet it continues blowing straight into your face, then the thermal is directly behind you. Finally, if the wind reduces in velocity, or even stops from a steady breeze, then the thermal is either ahead of you or right above you. Basically the thermal will be in the direction that the wind is blowing towards. Always pay attention to the general wind direction and look for changes in both its direction and velocity as signs for thermals. Other ground signs are birds. Many birds are capable of soaring, and you will often see them soaring on the thermals. Before launching, always check for birds. Pay close attention to how they are flying or if they are flapping hard—chances are they are also looking for lift. If they are soaring without flapping, then there is a good chance they are in lift. Birds also like to feed on small insects. As thermals initiate from the ground, often they will suck up small insects into the air. Birds will often feed on these insects and indicate another sign that there is lift. If you see birds flying in circles, almost in a feeding frenzy, there is a chance that lift is in their proximity. Another idea that works well is to fly over areas that are darker. Often a freshly plowed field, a parking lot, dirt—anything with a dark color will generate more heat—could also be a good source of generating thermals. One little test you may like to do is to paint various colors on a sheet of paper and place it in the sun. After 30 minutes or so, go and check which colors have created the most heat. Once you know what colors make the most heat, look for natural areas on the ground that match these colors and use those as locations for thermal hunting.

What to Do When You Find a Thermal

The first thing one needs to be absolutely sure of is that a lift has truly been found. Often a sailplane may find what is called a stick thermal, meaning you may have been carrying some additional speed and the model will climb by pitching upward. One of the best signals when the model is truly in lift is it will slightly speed up and the nose of the aircraft will be down slightly. The model will feel more agile and responsive. Once lift is found, start circling in a moderate circle (50–75 foot radius). Then determine the size of the thermal. If the Radian drops on one side of the thermal and is more buoyant on the other as it circles, it has reached the boundary of the thermal. The parameters of most thermals are clearly marked by the downward flowing air. The center has fast rising air and the outside has downward rolling air (often called the edge of the thermal or the thermal wall). In the middle of the day when thermals are at their strongest, the thermal wall can be very distinct and violent, yet in the morning and late evening they are much softer. The objective is to make sure one is completely inside the thermal. This is called centering or coring the thermal. You will need to constantly make adjustments to keep in the center of the thermal. Maintain climb all the way around each 360-degree circle. Often, especially if it is a windy day, thermals will drift with the wind. Most will travel directly downwind. One thing to remember is your Radian will also drift with the wind, especially when circling, so once the core of the thermal is established, the Radian will naturally drift with the thermal. One mistake people make is they don't allow their model to drift with the thermal, hence falling out of the front or side of the thermal as it drifts downwind.

Slope and Alpine Lift

Another form of soaring is slope lift. This lift is caused by wind rushing over a hill, cliff or any solid land mass that has more than 30 degrees of slope. As the air hits the hill or slope, it is redirected in an upward motion, thus creating lift. The best example of this is hang gliders that are soaring on the cliff faces. They maintain flight by soaring on the updrafts created by the sea breezes hitting the cliffs and creating what is known as slope lift. This sort of soaring is a lot of fun with your Radian, as you can always motor back to a safe landing if the lift falls away. The important thing to understand with slope-type lift is the wind must be almost directly blowing up the face of the hill or slope. Any more than a 20-degree variation may cause more turbulence than actual lift.

Alpine soaring has been popular in Europe and is also becoming popular in the US. It is the extreme end of thermal soaring. As thermals develop deep on the valley floor, they rise up the mountainside reaching their climax at the top of the mountain. This is often marked by a strong breeze blowing at the top of the mountain, which is in fact a fully developed thermal. One of the benefits of the Radian is that it has power assistance. Even though it does have an electric motor that will allow quite a steep climb, the primary purpose of the motor is a launch device so if the lift does go away, the Radian can motor back to a safe landing point.

We hope you enjoy your Radian and, more importantly, experience the art of thermal soaring. As this may be your first electric-powered sailplane, we hope this document has given you the basic ingredients to enhance your enjoyment with this wonderful product. We wish you all the best and happy thermal hunting.

Spektrum™ DX5e Radio System
Your ParkZone Radian is equipped with the revolutionary Spektrum 2.4GHz DSM2™ radio system. This radio system allows you to fly with the confidence of knowing you will be safe from interference.

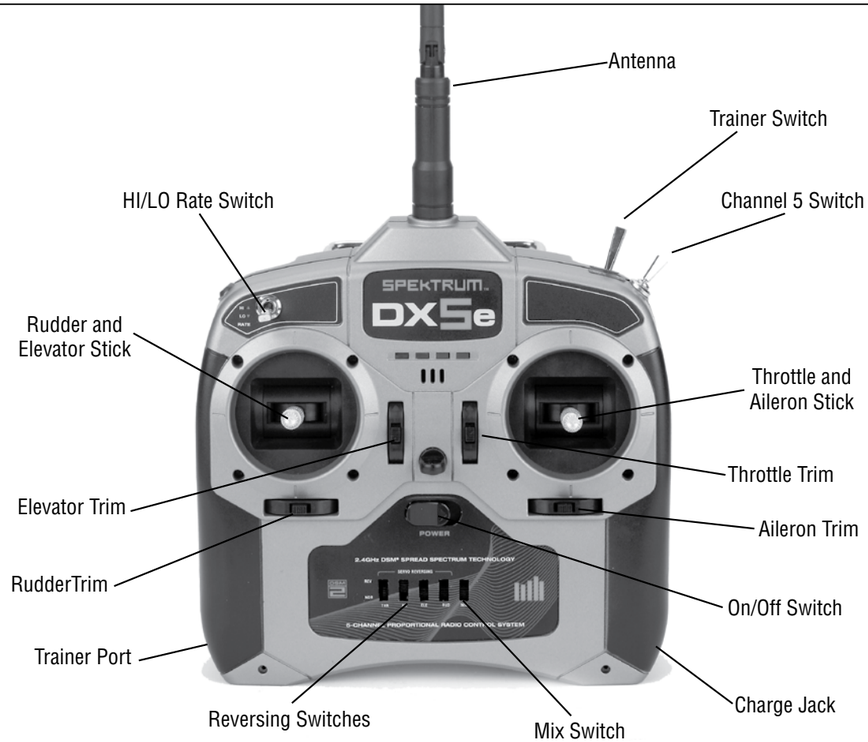
For more details regarding the Spektrum DX5e radio system, please see the dedicated DX5e manual included with your Radian.

Transmitter Features: The following statement applies to the receiver (in the USA).

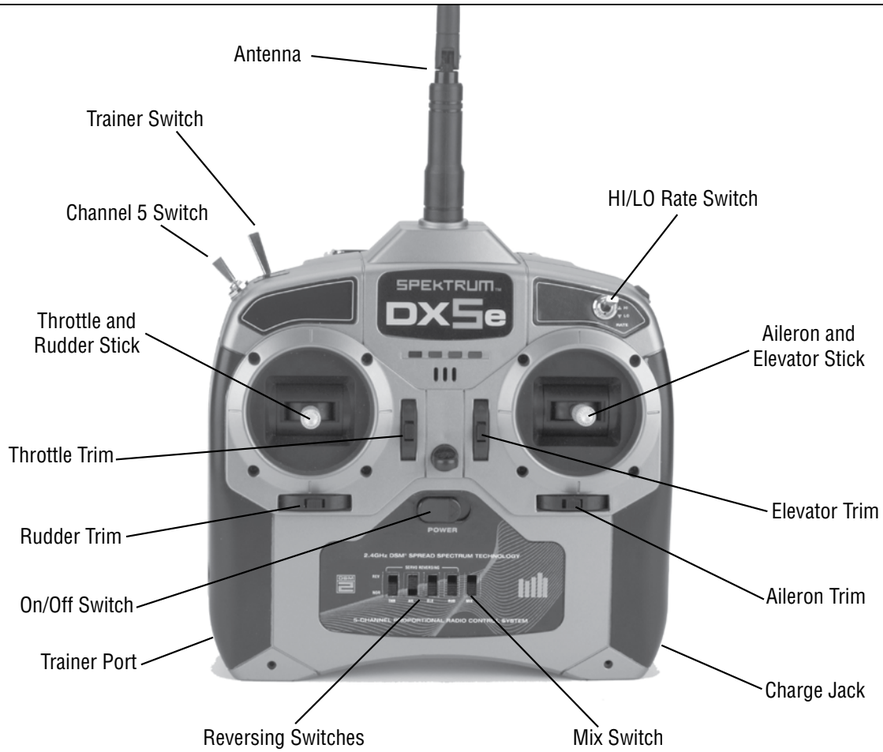
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesirable operation.

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



Mode 1



Mode 2

Step 1

Install Transmitter Batteries

1. Install the 4 new AA batteries (supplied) into the transmitter, observing proper polarity.

2. Turn the switch on and check for the glowing green LED to ensure the batteries have been installed correctly.

3 Replace the transmitter batteries when the low battery alarm sounds and the LED lights begin to flash.

Step 2

Charging the Flight Battery

The Radian comes with a 12V 2-3 cell DC balancing charger and 3S 11.1V 1300mAh Li-Po battery. You must charge the included Li-Po battery pack with a Li-Po specific charger only (such as the included charger). Never leave the battery and charger unattended during the charge process. Failure to follow the instructions properly could result in a fire. When charging, make certain the battery is on a heat-resistant surface.

DC Li-Po Balancing Charger Features

- Charges 2- and 3-cell Lithium Polymer battery packs
- Automatically detects incorrect cell count selection
- Simple single push-button operation
- LED charge status indicator
- LED cell balance indicator
- Audible beeper indicates power and charge status
- 12V accessory outlet input cord

Specifications

- Input power: 12V DC, 2A
- Charges 2- to 3-cell Li-Po packs with minimum capacity of 300mA
- Variable charge rates from 300mAh to 2 amps

3S 11.1V 1300mAh Li-Po Battery Pack

The ParkZone 3S Li-Po battery pack features a balancing lead that allows you to more safely charge your battery pack when used with the included ParkZone Li-Po balancing charger.

To Complete the Charging Process

1. Attach the input cord of the charger to the appropriate power supply (12V accessory outlet), or use the HBZ6513 (optional) and attach to 12V AC power supply. Once your charger has been correctly powered up, there will be an approximate 3-second delay and then you will hear an audible "beep" and the green (ready) LED will flash.

2. Refer to the chart below to select the appropriate charge rates:

BATTERY CAPACITY	MAX. CHARGE RATE
300—400mAh	300mAh
500—1000mAh	500mAh
1000—1500mAh	1A
1500—2000mAh	1.5A
2000mAh +	2.0A

Note: When charging the included 1300mAh battery, set the charge rate dial to 1.3A or lower. Selecting a charge rate higher than 1x battery capacity may cause a fire.

3. Select the proper number of cells that you will be charging, either 2 or 3 cells. In the case of the 1300mAh battery included with the Radian, you will select 3 cells.

4. Locate the safety charge lead on the battery pack. The charge lead of a 3-cell Li-Po battery will plug into the larger 4-pin port on the bottom right of the charger. A 2-cell pack will need to plug into the 3-pin port on the bottom left of the charger. Once the battery is properly plugged into the correct port, it will beep 3 times if it is a 3-cell, and twice if it is a 2-cell pack. Once this is done, you are ready to proceed to charge the battery pack.

5. Push the start button to begin the charging process. Once this is done, the charger will make an audible beep that matches the cell count, and then the red (charge) LED will begin to flash. Do not adjust the current once the charger has begun to charge.

Note: At times, the green LED may also flash during the charging process, indicating that the charger is balancing one or more of the cells at the same time it is charging the battery pack. When this is occurring, the red and green LEDs will both be flashing. It will not always be necessary for the cells to be balanced.

6. When the battery pack is fully charged, you will hear an audible beep for about 3 seconds, and the green LED will be solid. Always unplug the battery from the charger immediately upon completion. Failure to do so could cause a fire.

Step 3

Attaching the Wing

In order to attach the wing of your Radian, please follow these simple instructions:

1. Locate the wing spar, as well as the left and right wing panels.

2. Slide the wing spar into the socket located in either the left or right wing panel. Confirm the wing spar is fully seated in the socket.

Note: Use caution when inserting the wing spar into the sockets of the left and right wing panels. Pushing too hard will damage the wing panels.

3. Slide the wing spar and panel through the opening in the fuselage. Slide the wing panel into the fuselage, making sure it is fully seated.

4. Slide the opposite wing panel onto the wing spar. Press the remaining wing panel into the fuselage until it is fully seated. The wing panels are keyed to "lock" when the wing is installed.

Step 4

Attaching the Horizontal Stabilizer

1. Locate the horizontal stabilizer.

2. Slide the horizontal stabilizer through the slot between the fuselage and the rudder. Make sure the control horn installed in the elevator will properly align with the pushrod exiting the left side of the fuselage.

3. When you are certain the tail is centered correctly, use the tape provided to properly secure the horizontal stabilizer to the fuselage as shown. Use the tape on the top and bottom of each side of the tail (total of 4 applications).

4. Turn on the transmitter, confirming the throttle stick is in the full down/idle position.

5. Remove the canopy from the fuselage (attached with magnets). Plug the blue EC3 connector installed on the battery into the EC3 device connector installed on the speed control.

6. Install the pushrod through the hole in the keeper. Move the elevator to the neutral position and tighten the keeper. The pushrod keeper comes pre-installed in the outermost hole of the control horn. It is recommended to fly the Radian with the pushrods installed in the default positions until you become more comfortable with the controls.

	Mode 2	Mode 1
Throttle	Left Stick Up/Down	Right Stick Up/Down
Elevator	Right Stick Up/Down	Left Stick Up/Down
Rudder	Right Stick Left/Right	Right Stick Left/Right

Note: To make trim adjustments to the elevator or rudder:

a. Turn on the transmitter.

b. Plug the fully charged 11.1V 1300mAh battery into the ESC.

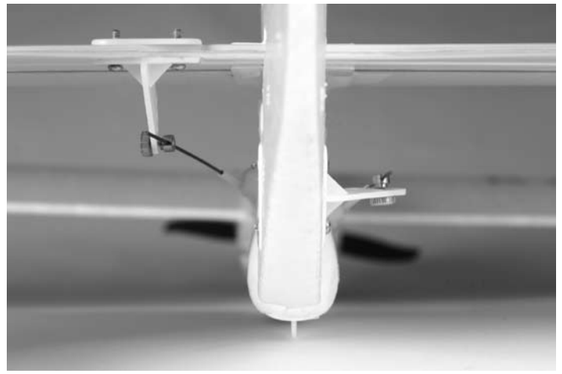
c. Use elevator or rudder trim of the transmitter by moving the trim up or down to achieve the tail to be at neutral when the gimbal is also at neutral. If these changes are not sufficient, center the transmitter elevator or rudder trims. Loosen the spool from the control horn and move the control surface back to neutral. Re-tighten the spool.

Warning: Always keep hands and all objects away from the propeller in case the motor is engaged. A moving propeller can cause severe injury and damage.

Step 5

Connecting the Rudder Pushrod

1. Loosen the pushrod keeper installed on the rudder control horn. The pushrod keeper comes pre-installed one hole in from the outermost of the control horn.



2. Insert the rudder pushrod through the hole in the keeper. Move the rudder to the neutral position and tighten the keeper.

At this time, your Radian RTF is now complete. Once pre-flight control and range checks have been completed, the Radian is ready to fly.

Step 6

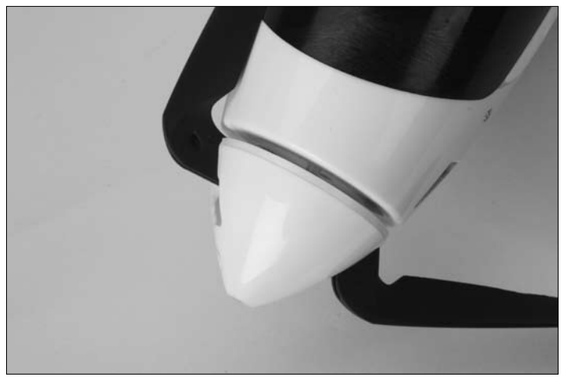
Replacing the Propeller

1. Using a #0 screwdriver, remove the two screws installed in the front of the spinner. Remove the spinner cone and place it aside so it does not get lost.

2. Remove the pins installed in the prop blades. Set them aside with the spinner cone so they do not become lost.

3. Replace the prop blades and reinstall the pins. Make sure the pins are flush when installed, otherwise the spinner cone will not install.

4. Reinstall the spinner and confirm it is properly seated. Reinstall the screws in the front of the spinner.



Step 7

Range Test

You will need two people to perform the range test: one to hold the plane and the other to give the transmitter input.

WARNING: The person holding the plane should hold it in such a way that the propeller does not come into contact with any part of their clothing or body.

To place the transmitter in range check mode, turn the transmitter on. Face the model with the transmitter in your normal flying position. Pull and hold the trainer switch while toggling the HI/LO Rate Switch four times. The LEDs will flash and the alarm will sound indicating the system is in range check mode.

1. One person holds the transmitter while the other person walks 30 paces away with the airplane.
2. Be sure the throttle is in the full down/idle position.
3. Plug the blue EC3 connector on the flight battery into the blue EC3 device connector installed on the speed control.
4. The propeller should spin quickly as soon as the throttle stick is advanced.
5. As the first person moves the transmitter controls, the other person watches to be sure the airplane's motor and tail controls operate smoothly.
6. Once the range check has been completed, simply release the trainer switch and the transmitter will exit range check mode.

Step 8

Receiver

Your Radian comes equipped with the Spektrum AR500 full range 2.4GHz DSM receiver. The following are the channels that are programmed in the receiver:

Bind Port:
Ch. 1: Throttle
Ch. 2: Aileron Port #1
Ch. 3: Elevator
Ch. 4: Rudder
Ch. 5: Gear
Ch. 6: Aileron Port #2

Note: This port sends out a duplicate of the aileron signal.

Make certain you plug in the servo leads to the correct corresponding channel. Always perform a function check prior to flying to ensure this.

Binding

The Spektrum DX5e transmitter and AR500 receiver have been bound for you. Should you have a need to re-bind the AR500 to the DX5e or another DSM2 transmitter, please follow the provided instructions.

1. Confirm the flight battery has been unplugged from the ESC and the transmitter is powered off.
2. Insert the bind plug into Batt/Bind port on the AR500 receiver.
3. Connect the blue EC3 connector on the battery to the ESC. The orange LED on the AR500 should begin to blink.
4. Pull forward on the trainer switch located on the DX5e transmitter while powering on the transmitter. The transmitter will emit a series of beeps to confirm it has entered Bind mode. Release the trainer switch.
5. The orange LED will turn to solid when the bind process has completed. Remove the bind plug from the AR500, disconnect the flight battery and power the transmitter off.

Step 9

30A ESC Instructions

The E-flite 30A Pro Brushless ESC is a lightweight, high-quality, efficient sensorless brushless electronic speed control with an integrated Switch-Mode BEC. It can operate without the need for a separate receiver battery to power your servos and receivers, saving you weight and complication. It is capable of up to 30 amps continuous current when using 3- to 4-series Li-Po battery packs. You can drive up to 5 analog or 4 digital sub-micro-sized servos with the BEC on any recommended input voltage. This ESC also features safe power arming along with advanced programmable features such as low voltage cutoff, braking, timing, throttle input range, and more, making this truly a 'pro series' speed control.

Note: Your Radian 30A ESC comes preprogrammed with the brake on (for proper propeller folding), and the auto-cut set for 3S to match the included battery. For detailed programming instructions, please refer to the E-flite 30A ESC instruction sheet included with the Radian.

Note: ALWAYS assume the motor and the propeller are live. ALWAYS keep clear of the propeller at all times. The high rpm of the brushless motor can cause severe injury.

Step 10

Flying the Radian

Always choose a wide-open space for flying your ParkZone Radian. It is ideal for you to fly at an AMA sanctioned flying field. If you are not flying at an AMA approved site, always avoid flying near houses, trees, wires and buildings. You should also be careful to avoid flying in areas where there are many people, such as busy parks or school yards. Always follow local ordinances. We recommend only flying your Radian in light winds.

Prior to each flight

- Always make sure your Radian is properly trimmed.
- Always make sure the receiver, ESC and battery are properly secured.
- Always verify the propeller is on securely.
- Always ensure the servo reversing switches on the transmitter are set correctly.
- Always verify the dual rates switch is set at where you plan on flying. We recommend LOW rates for your initial flying. The Radian is very maneuverable on high rates and requires a lot of experience to handle properly.

Center of Gravity Location

The center of gravity on your Radian should be located approximately 2-1/2 inches (63mm) behind the leading edge of the wing, when measured against the fuselage. This CG location has been determined with the ParkZone 1300mAh 11.1V Li-Po battery installed.

Note: The power system installed in the Radian is designed for climbing use in bursts (50% operating time or less). It is not intended to run full throttle for long periods of time. Not following this direction may result in reduced life of the power system.

After flying, it is important to recharge the Li-Po battery pack included with the Radian. The Li-Po battery pack should always be stored at least 70% charged to prevent damage to the battery pack.

Replacement Parts

Make sure that you keep your Radian flying. Replacement parts are available at your local hobby shop or from Horizon Hobby (www.horizonhobby.com). Please try your local hobby shop first. By supporting them, they will be there when you need them.

Item #:	Description:
PKZ1017	Propeller Blades: Radian
PKZ1018	Prop Adapter & Spinner Set: Radian
PKZ1033	11.1V 1300mAH LiPo Battery
PKZ1040	2-3 DC LiPo Balancing Charger
PKZ1060	SV80 3-Wire Sub-Micro Servo
PKZ4703	Decal Sheet: Radian
PKZ4713	Canopy: Radian
PKZ4714	Firewall w/Screws: Radian
PKZ4716	PKZ 480 Outrunner Brushless Motor: Radian
PKZ4720	Main Wing with Spar: Radian
PKZ4722	Pushrods with Clevis: Radian
PKZ4725	Tail Wing Set: Radian
PKZ4767	Bare Fuselage: Radian
SPMAR500	DSM2 5CH Sport Receiver
EFLA1030	30-Amp Pro SB Brushless ESC

Option Parts

Item #:	Description:
EFLB12503S	11.1V 1250mAh Li-Po Battery
EFLC505	1-5 Cell Li-Po Charger with Balancer
HBZ6513	Alligator Clip: 12V Adapter
THP1205P	AC to 12VDC, 5.0A Power Supply: EFLC505
SPMP300	Spektrum Neck Strap
SPM9525	Spektrum 1500mAh Ni-MH AA (4)
SPM9526	Spektrum 150mA Wall Charger

Register your product and receive ParkZone updates at www.parkzone.com

Warranty and Follow-Up Procedures

Warranty Period:
Exclusive Warranty- Horizon Hobby, Inc., (Horizon) warranties that the Products purchased (the "Product") will be free from defects in materials and workmanship at the date of purchase by the Purchaser.

Limited Warranty
(a) This warranty is limited to the original Purchaser ("Purchaser") and is not transferable. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. This warranty covers only those Products purchased from an authorized Horizon dealer. Third party transactions are not covered by this warranty. Proof of purchase is required for warranty claims. Further, Horizon reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied.

(b) Limitations- HORIZON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCT. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

(c) Purchaser Remedy- Horizon's sole obligation hereunder shall be that Horizon will, at its option, (i) repair or (ii) replace, any Product determined by Horizon to be defective. In the event of a defect, these are the Purchaser's exclusive remedies. Horizon reserves the right to inspect any and all equipment involved in a warranty claim. Repair or replacement decisions are at the sole discretion of Horizon. This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the Product. This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone other than Horizon. Return of any goods by Purchaser must be approved in writing by Horizon before shipment.

Damage Limits:
HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCT, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY. 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 this Product, you are advised to return this 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).

Safety Precautions:
This is a sophisticated hobby Product and not a toy. 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. The Product 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 injury.

Questions, Assistance, and Repairs:
Your local hobby store and/or place of purchase cannot provide warranty support or repair. Once assembly, setup or use of the Product has been started, you must contact 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 direct your email to productsupport@horizonhobby.com, or call 877.504.0233 toll free to speak to a service technician.

Inspection or Repairs
If this Product needs to be inspected or repaired, please call for a Return Merchandise Authorization (RMA). 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. A Service Repair

Request is available at www.horizonhobby.com on the "Support" tab. If you do not have internet access, please include a letter with your complete name, street address, email address and phone number where you can be reached during business days, your RMA number, a list of the included items, method of payment for any non-warranty expenses and a brief summary of the problem. Your original sales receipt must also be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

Warranty Inspection and Repairs
To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be repaired or replaced free of charge. Repair or replacement decisions are at the sole discretion of Horizon Hobby.

Non-Warranty Repairs
Should your repair not be covered by the warranty, the repair 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 repair you are agreeing to payment of the repair without notification. Repair estimates are available upon request. You must include this request with your repair. Non-warranty repair estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Please advise us of your preferred method of payment. Horizon accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. If you choose to pay by credit card, please include your credit card number and expiration date. Any repair left unpaid or unclaimed after 90 days will be considered abandoned and will be disposed of accordingly. Please note: non-warranty repair is only available on electronics and model engines.

United States:
Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Service Center
4105 Fieldstone Road
Champaign, Illinois 61822

All other products requiring warranty inspection or repair should be shipped to the following address:

Horizon Support Team
4105 Fieldstone Road
Champaign, Illinois 61822

Please call 877.504.0233 or e-mail us at productsupport@horizonhobby.com with any questions or concerns regarding this product or warranty.

United Kingdom:
Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Hobby UK
Units 1-4 Ployters Rd
Staple Tye
Southern Way
Harlow
Essex CM18 7NS
United Kingdom

Please call +44 1279 641 097 or sales@horizonhobby.co.uk with any questions or concerns regarding this product or warranty.

Germany:
Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Technischer Service
Otto Hahn Str. 9a
25337 Elmshorn
Germany

Please call +49 4121 46199 66 or service@horizonhobby.de with any questions or concerns regarding this product or warranty.