

BLADE® 270 CFX



**Instruction Manual
Bedienungsanleitung
Manuel d'utilisation
Manuale di Istruzioni**

BNFTM
BASIC

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 and click on the support 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:

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

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

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.



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.

Safety Precautions and Warnings

- Always keep a safe distance in all directions around your model to avoid collisions or injury. This model is controlled by a radio signal subject to interference from many sources outside your control. Interference can cause momentary loss of control.
- Always operate your model in open spaces away from full-size vehicles, traffic and people.
- Always carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.).
- Always keep all chemicals, small parts and anything electrical out of the reach of children.
- Always avoid water exposure to all equipment not specifically designed and protected for this purpose. Moisture causes damage to electronics.
- Never place any portion of the model in your mouth as it could cause serious injury or even death.
- Never operate your model with low transmitter batteries.
- Always keep aircraft in sight and under control.
- Always move the throttle fully down at rotor strike.
- Always use fully charged batteries.
- Always keep transmitter powered on while aircraft is powered.
- Always remove batteries before disassembly.
- Always keep moving parts clean.
- Always keep parts dry.
- Always let parts cool after use before touching.
- Always remove batteries after use.
- Never operate aircraft with damaged wiring.
- Never touch moving parts.



WARNING AGAINST COUNTERFEIT PRODUCTS: If you ever need to replace a Spektrum component found in a Horizon Hobby product, always purchase from Horizon Hobby, LLC or a Horizon Hobby 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.

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Specifications

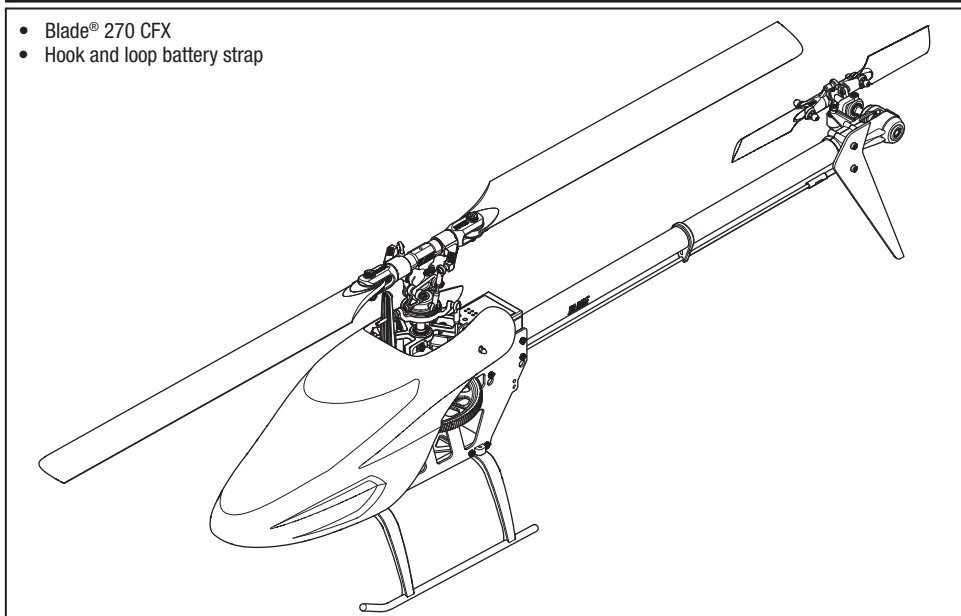
Length	560mm	Main Rotor Diameter	620mm
Height	190mm	Tail Rotor Diameter	160mm
Flying Weight	626 g	<i>Visit www.bladehelis.com to register your helicopter</i>	

Components

Airframe	Blade® 270 CFX	Included
Motors	Brushless Outrunner, 2300Kv	Installed
Receiver	AR7210BX	Installed
ESC	Castle Creations Talon 35 - Amp ESC	Installed
Swash Servos	Digital Cyclic Servo 12 g Metal Gear	Installed
Tail Servo	Digital Tail Servo 12 g Metal Gear	Installed
Battery	910mAh 6s 22.2V 30c Li-Po (EFLB9106S30)	Required
Charger	Li-Po Balancing Charger	Required
Transmitter	Full Range DSM2®/DSMX® technology transmitter (DX6 and up)	Required

Box Contents

- Blade® 270 CFX
- Hook and loop battery strap



First Flight Preparation

- Remove and inspect contents
- Begin charging the flight battery (not included)
- Install the flight battery in the helicopter (once it has been fully charged)
- Program your computer transmitter
- Bind your transmitter
- Familiarize yourself with the controls
- Find a suitable area for flying

Low Voltage Cutoff (LVC)

When the battery reaches 18V under load, the ESC will continuously lower power to the motor until complete shutdown. This helps prevent over-discharge of the Li-Po battery. Land immediately when the ESC activates LVC. Continuing to fly after LVC can damage the battery, cause a crash or both. Crash damage and batteries damaged due to over-discharge are not covered under warranty.

Transmitter Setup

Program your transmitter before attempting to bind or fly the helicopter. Transmitter programming values are shown below for the Spektrum DX6i, DX7s, DX6, DX7, DX8, DX9 and DX18.

The files for models using Spektrum™ transmitters with AirWare™ software are also available for download online at www.spektrumrc.com.

Flying Checklist

- Always turn the transmitter on first
- Plug the flight battery into the lead from the ESC
- Allow the ESC to initialize and arm properly
- Fly the model
- Land the model
- Unplug the flight battery from the ESC
- Always turn the transmitter off last

Repeatedly flying the helicopter until LVC activates will damage the helicopter battery.

Disconnect and remove the Li-Po battery from the aircraft after use to prevent trickle discharge. During storage, make sure battery charge does not fall below 3V per cell.

SAFE® Panic Feature Programming

Adjustment of the SAFE® panic recovery feature is shared with the gyro gain adjustment. On the “GYRO” screen in the transmitter, there are two values, POS 0 and POS 1.

The value for POS 0 represents the tail gyro heading hold gain. The further this positive value is away from 0 (0 to +100), the higher the tail gyro gain.

The value for POS 1 represents the SAFE gain. The further this negative value is away from 0 (0 to -100), the more aggressively SAFE will recover the helicopter in a “panic” situation.

The gain values presented in this transmitter set up sheet are a starting point we found worked well for most situations.

DX6i

SETUP LIST

Model Type	HELI
Swash Type	1 servo 90

REVERSE

Channel	Direction
THRO	N
AILE	N
ELEV	R
RUDD	R
GYRO	N
PITC	R

Modulation Type
AUTO DSMX-ENABLE

D/R COMBI

D/R SW	AILE
--------	------

Timer

Down Timer	4:00
Switch	THR CUT

ADJUST LIST

TRAVEL ADJ

Channel	Travel
THRO	100/110
AILE	100/100
ELEV	100/100
RUDD	100/100
GYRO	100/100
PITC	100/100

Throttle Curve

Switch Pos (F Mode)	Pos 1	Pos 2	Pos 3	Pos 4	Pos 5
NORM	0	30	30	30	30
STUNT	100	100	100	100	100
HOLD			0		

GYRO

RATE	SW-GYRO
0	65%
1	28%

D/R & Expo

Chan	Sw Pos	D/R	Expo
AILE	0	100	+25
	1	75	+25
ELEV	0	100	+25
	1	75	+25
RUDD	0	100	+25
	1	75	+25

Pitch Curve

Switch Pos (F Mode)	Pos 1	Pos 2	Pos 3	Pos 4	Pos 5
NORM	30	40	50	75	100
STUNT	0	25	50	75	100
HOLD	0	25	50	75	100

Panic Mode Operation

Gyro Switch: Pos 0 = Panic Mode Off
Pos 1 = Panic Mode On

DX7s, DX8

SYSTEM SETUP

Model Type	HELI
Swash Type	1 servo Normal

F-Mode Setup

Flight Mode	F Mode
Hold	Hold

SW Select

Trainer	INH
F Mode	INH
Gyro	INH
Mix	INH
Hold	INH
Knob	INH

Frame Rate

11ms
DSMX

FUNCTION LIST

Servo Setup

Chan	Travel	Reverse
THR	124/111	Normal
AIL	100/100	Normal
ELE	100/100	Reverse
RUD	100/100	Normal

D/R & Expo

Chan	Switch Pos (Ail D/R)		D/R	Expo
	DX7s	DX8		
AILE	0	0	100/100	+25
	1	2	75/75	+25
ELEV	0	1	100/100	+25
	1	2	75/75	+25
RUDD	0	0	100/100	+25
	1	2	75/75	+25

Gyro

Chan	Switch Pos (Rud D/R)	
GEAR	0	40%
	1	-60%

Throttle Cut

HOLD	0%
------	----

Throttle Curve

Switch Pos (F Mode)		Pt 1	Pt 2	Pt 3	Pt 4	Pt 5
DX7s	DX8					
N	N	0	30	30	30	30
G	1	70	70	70	70	70
1	2	100	100	100	100	100

Pitch Curve

Switch Pos (F Mode)		Pt 1	Pt 2	Pt 3	Pt 4	Pt 5
DX7s	DX8					
N	N	30	40	50	75	100
1	1	0	25	50	75	100
	2	0	25	50	75	100
HOLD	HOLD	0	25	50	75	100

Timer

Mode	Count Down
Time	4:00 Tone
Start	Throttle Out
Over	25%

Panic Mode Operation

RUD D/R

Pos 0 = Panic Mode Off
Pos 1 = Panic Mode On

DX6, DX7 (Gen 2), DX9, DX18

SYSTEM SETUP

Model Type	HELI
Swash Type	Normal

F-Mode Setup

Switch 1	Switch B
Switch 2	Inhibit
Hold Switch	Switch H
	0 1

Channel Assign

Channel Input	
1 Throttle	
2 Aileron	
3 Elevator	
4 Rudder	
5 Gear	Gyro
6 AUX 1	Pitch
7 AUX 2	AUX 2

Frame Rate

11ms
DSMX

Panic Mode Operation

Switch A

Pos 0 = Panic Mode Off

Pos 1 = Panic Mode On

FUNCTION LIST

Servo Setup					
Chan	Travel	Reverse	Chan	Travel	Reverse
THR	111/124	Normal	PIT	100/100	Normal
AIL	100/100	Normal	AX2	100/100	Normal
ELE	100/100	Reverse	AX3	100/100	Normal
RUD	100/100	Normal	AX4	100/100	Normal
GER	100/100	Normal			

D/R & Expo

Chan	Switch (F) Pos		D/R	Expo
	DX6	DX7, 9, 18		
AILE	0	0	100/100	+25
		1	100/100	+25
ELEV	1	2	75/75	+25
		0	100/100	+25
RUDD		1	100/100	+25
	1	2	75/75	+25

Gyro

Chan	Swich (A) Pos	
GEAR	0	40%
	1	-60%

Throttle Curve

Sw (B) Pos	Pt 1	Pt 2	Pt 3	Pt 4	Pt 5
N	0	30	30	30	30
1	70	70	70	70	70
2	100	100	100	100	100
HOLD	10	10	10	10	10

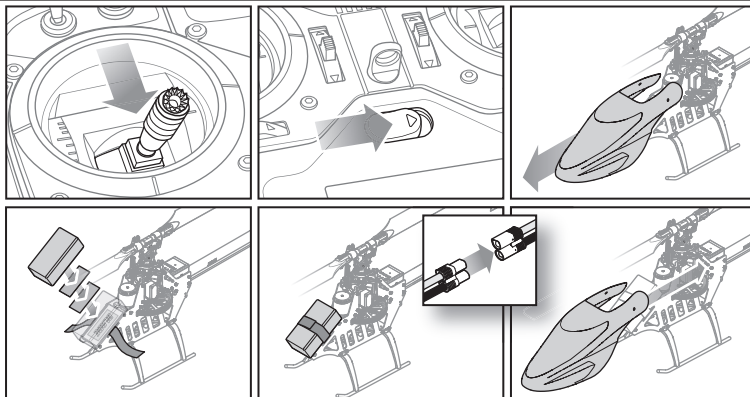
Pitch Curve

Sw (B) Pos	Pt 1	Pt 2	Pt 3	Pt 4	Pt 5
N	30	40	50	75	100
1	0	25	50	75	100
2	0	25	50	75	100
HOLD	0	25	50	75	100

Timer

Mode	Count Down
Time	4:00
Start	Throttle Out
Over	25%
One Time	Inhibit

Installing the Flight Battery



1. Lower the throttle.
2. Power on the transmitter.
3. Center the throttle trim.
4. To allow the ESC to arm and to keep rotors from initiating at startup, turn on throttle hold and normal flight mode before connecting the flight battery.
5. Attach hook material to the helicopter frame and loop material to the battery.
6. Install the flight battery on the helicopter frame. Secure the flight battery with a hook and loop strap. Connect the battery cable to the ESC.

CAUTION: Always keep the power lead positioned AWAY from the elevator servo. Failure to do so could cause the lead to get caught, resulting in a crash causing property damage and injury.

CAUTION: Make sure the flight battery does not come in contact with the motor. Failure to do so will cause the motor, ESC and battery to overheat, resulting in a crash causing property damage and injury.

7. Do not move the helicopter until the AR7210BX initializes. The swashplate will move up and down, indicating that the unit is ready. The AR7210BX will also emit a solid BLUE Status LED when it is ready.
8. The helicopter motor will emit a series of tones, indicating the ESC is armed.

CAUTION: Always disconnect the Li-Po battery from the aircraft receiver when not flying to avoid over-discharging the battery. Batteries discharged to a voltage lower than the lowest approved voltage may become damaged, resulting in loss of performance and potential fire when batteries are charged.

Transmitter and Receiver Binding

Binding is the process of programming the receiver to recognize the GUID (Globally Unique Identifier) code of a single specific transmitter. You need to 'bind' your chosen

Spektrum™ DSM2®/DSMX® technology equipped aircraft transmitter to the receiver for proper operation.

Binding Procedure

1. Program your transmitter using the Transmitter Setup found in this manual.
2. Insert the bind plug in the BND/DAT port on the receiver.
3. Connect the flight battery to the ESC. The H menu LED should be flashing, indicating the AR7210BX is in bind mode.
4. Move the throttle stick to the desired failsafe position (low throttle position in normal mode).
5. Follow the procedures of your specific transmitter to enter Bind Mode. The system will connect within a few seconds. Once connected, the H LED will turn off and the AR7210BX will start the initialization process.
6. When the initialization process is complete, the Status LED light will come ON solid BLUE.
7. Disconnect the flight battery and remove the bind plug from the AR7210BX. Store the bind plug in a convenient place.

WARNING: You must move the throttle to the LOW/OFF position during binding. Failure to do so may cause the rotor blades to spin and the helicopter to lift during the AR7210BX initialization, which could result in damage to property and injury.

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

If you encounter problems, obey binding instructions and refer to transmitter troubleshooting guide for other instructions. If needed, contact the appropriate Horizon Product Support office.

Throttle Hold

Throttle hold only turns off the motor on an electric helicopter. You maintain pitch and direction control.

The blades will spin if throttle hold is OFF. For safety, turn throttle hold ON any time you need to touch the helicopter or check the direction controls.

Throttle hold is also used to turn off the motor if the helicopter is out of control, in danger of crashing, or both.

Control Tests



CAUTION: You must complete the Rudder and Cyclic tests prior to flight. Failure to complete the tests ensuring the sensor directions are not reversed can cause the helicopter to crash, resulting in property damage and injury.

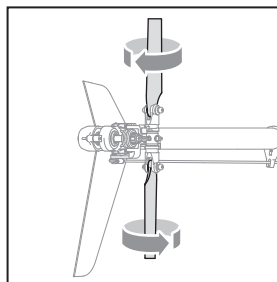
Rudder

1. Power on the transmitter.
2. Turn TH HOLD ON and put transmitter in normal mode.
3. Connect the helicopter battery to the ESC.

NOTICE: Do not allow the helicopter to move until the Status LED is solid blue and all menu LEDs are OFF. The gyro will not operate correctly if the helicopter moves before the Status LED is solid blue.

4. Move the rudder stick to the right. The tail rotor blades move as shown. If they do not move as shown, reverse the rudder channel in the transmitter (refer to your transmitter manual for instructions).

5. Release the rudder control. Manually turn the helicopter nose to the left. The tail rotor blades automatically move as shown. If they do not move as shown, refer to the AR7210BX manual for information on reversing the tail sensor direction (Setup menu point F).



Cyclic

When using a flybarless rotor head, you are controlling rotational rates while the AR7210BX controls the servos. You are not directly controlling the servos with the transmitter.

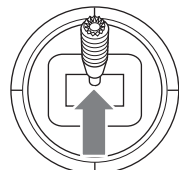
It is normal for the swashplate to slowly move back to its original position after a stick input and for the servos to not move at the same speed as your control sticks.

1. Tilt the helicopter forward. The swashplate should tilt backward.
2. Tilt the helicopter backward. The swashplate should tilt forward.
3. Roll the helicopter left. The swashplate should roll right.
4. Roll the helicopter right. The swashplate should roll left.
5. If the swashplate does not move in the correct direction, you will need to reverse the cyclic sensor direction. Refer to the AR7210BX manual for more information (Setup menu point M).

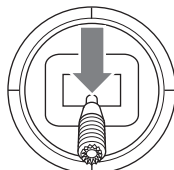
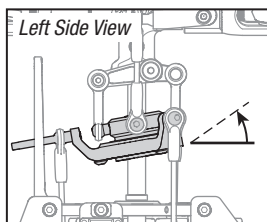
Cyclic and Collective Control Test

Turn on Throttle Hold when doing the control tests.

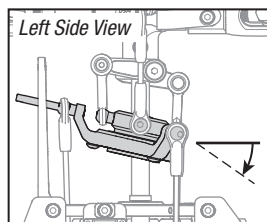
Elevator



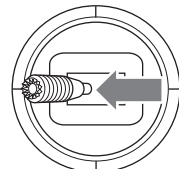
Elevator down



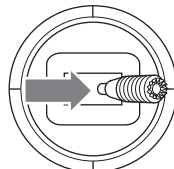
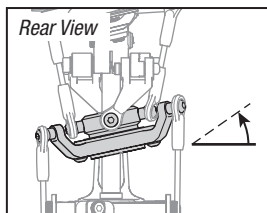
Elevator up



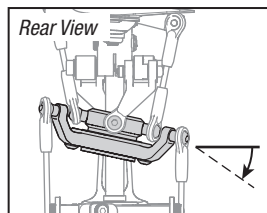
Aileron



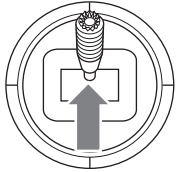
Aileron left



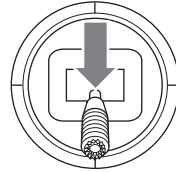
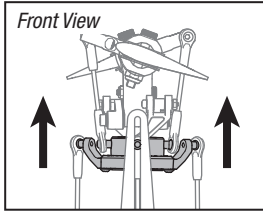
Aileron right



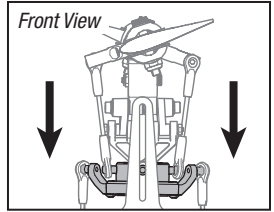
Collective Pitch



Collective pitch up



Collective pitch down



Motor

Place the helicopter outdoors on a clean, flat and level surface (concrete or asphalt) free of obstructions. Always stay clear of moving rotor blades.

1. The motor emits a series of tones when the helicopter's ESC arms properly. Before you continue, confirm that TH HOLD is ON.

WARNING: The motor will spin when throttle is increased while TH HOLD is OFF.

2. Check the swashplate directions to ensure they are moving in the correct direction. Please refer to the diagrams above for reference.



WARNING: Stay at least 30 feet (10 meters) away from the helicopter when the motor is running. Do not attempt to fly the helicopter at this time.

3. Ensure the throttle is lowered completely. Confirm the transmitter is still set to normal flight mode. Turn throttle hold off at this time. Slowly increase the throttle until the blades begin to spin. The main blades spin clockwise when viewing the helicopter from the top. The tail rotor blades spin counterclockwise when viewing the helicopter from the right-hand side.

Pre-Flight Checklist

- Check all screws and ensure that they are tight
- Check belt tension and ensure that it is not too tight or too loose
- Check main and tail blades to ensure they are not damaged
- Check all links and make sure they move freely but do not pop off easily
- Check that flight battery and transmitter battery are fully charged
- Check all wires to ensure that they are not cut, pinched, or chaffed and are properly secured
- Check all wire connections
- Check gears and make sure no teeth are missing
- Do a complete control test
- Check that servos are functioning properly
- Check to make sure flight battery is properly secured
- Check to make sure AR7210BX is properly secured

Flying the Blade 270 CFX

Consult local laws and ordinances before choosing a location to fly your aircraft.

Select a large, open area away from people and objects. Your first flights should be outdoors in low-wind conditions. Always stay at least 30 feet (10 meters) away from the helicopter when it is flying.

The Blade 270 CFX is intended to be flown outdoors.

CAUTION: The Blade 270 CFX is intended for pilots with experience flying aerobatic, collective pitch helicopters. The Blade 270 CFX is more responsive than other Blade helicopters. If you are not an experienced 3D or collective pitch helicopter pilot, do not attempt to fly this product.

The Blade 270 CFX is equipped with a "panic" feature which provides an additional margin for recovery while you are learning new maneuvers and significantly reduces the probability of crashing. This feature is particularly useful for the experienced pilot attempting new maneuvers. **The panic feature is NOT intended to replace the skill or experience of an advanced pilot.**

Panic Feature Operation



CAUTION: Before powering on the helicopter, set the panic switch to OFF. Failure to do so will cause the helicopter to initialize with a tail gyro gain value that is too low and could cause a loss of control resulting in a crash.

Activate panic mode by flipping the assigned switch from POS 0 to POS 1. When panic mode is activated, the model will quickly return to an upright attitude and apply positive pitch, causing the model to climb. The helicopter will continue to climb until panic mode is de-activated.

Before de-activating panic mode, return the collective stick to the approximate hover point or higher. De-activate panic mode by flipping the assigned switch from POS 1 to POS 0. After the assigned switch is returned to POS 0, the amount of negative pitch available is reduced to help prevent unexpected, rapid loss of altitude. Apply positive pitch greater than the hover point, **prior to attempting any maneuvers requiring negative pitch**, to enable full pitch travel.

Takeoff

Deliberately increase throttle and establish a hover at least 24" (0.6 meter) high, outside of ground effect.



CAUTION: Do not give any aileron, elevator or rudder commands before takeoff or the helicopter may crash during takeoff.



CAUTION: Always fly the helicopter with your back to the sun and the wind to prevent loss of flight control.

Flying

The helicopter lifts off the ground when the rotor head reaches a suitable speed. Establish a low-level hover to verify proper operation of your helicopter. You must not set any trim; the flybarless design of the Blade 270 CFX renders trim unnecessary. Setting trim or sub-trim can cause an unwanted drift or rotation of the helicopter.

First flights should be performed in normal mode and low cyclic and rudder dual rates until you are familiar with the flying manner of the Blade 270 CFX. Discover the rates that fit your flying style.

Gyro Gain Adjustment

- If the tail wags or oscillates, lower the gain on the gyro.
On your transmitter's gyro menu, decrease the gyro gain values a small amount at a time until the helicopter is stable within a particular flight mode.

- If the tail is drifting while hovering, increase the gain on the gyro.
On your transmitter, increase the gyro gain values a small amount at a time until the tail starts to wag/oscillate. Afterwards, reduce the gain until the tail stops wagging/oscillating.

Blade Helicopter Belt Tension

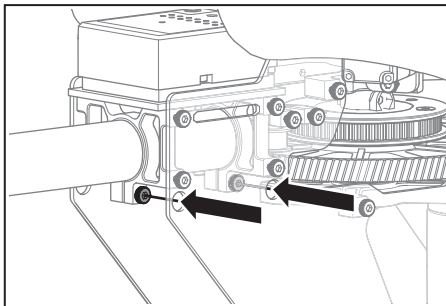
Belt tension that is too tight results in loss of power and causes the belt to wear more quickly. Tension that is too loose can cause belt damage and loss of tail rotor control in flight.

To check for proper belt tension:

1. View the tail rotor drive belt through the opening at the back of the main frame.
2. Use a hex wrench or standard screwdriver to compress the belt through the opening.
3. Apply light pressure on the belt, compressing the belt toward the left side of the tail boom.
4. The belt tension is correct if the compressed side of the belt reaches approximately halfway to the opposite side of the belt.
 - a. *If the compressed side of the belt reaches farther than halfway to the other side of the belt, the tension is too loose.*
 - b. *If the compressed side of the belt does not reach halfway to the other side of the belt, the tension is too tight.*

To adjust belt tension:

1. Loosen the two horizontal stabilizer screws.
2. Loosen the 2 screws at the back of the main frame.



3. Slide the boom forward or aft to adjust the belt tension.
4. When the belt tension is properly adjusted, tighten the 2 screws at the back of the frame.
5. Tighten the horizontal stabilizer screws.

Post-Flight Inspections and Maintenance

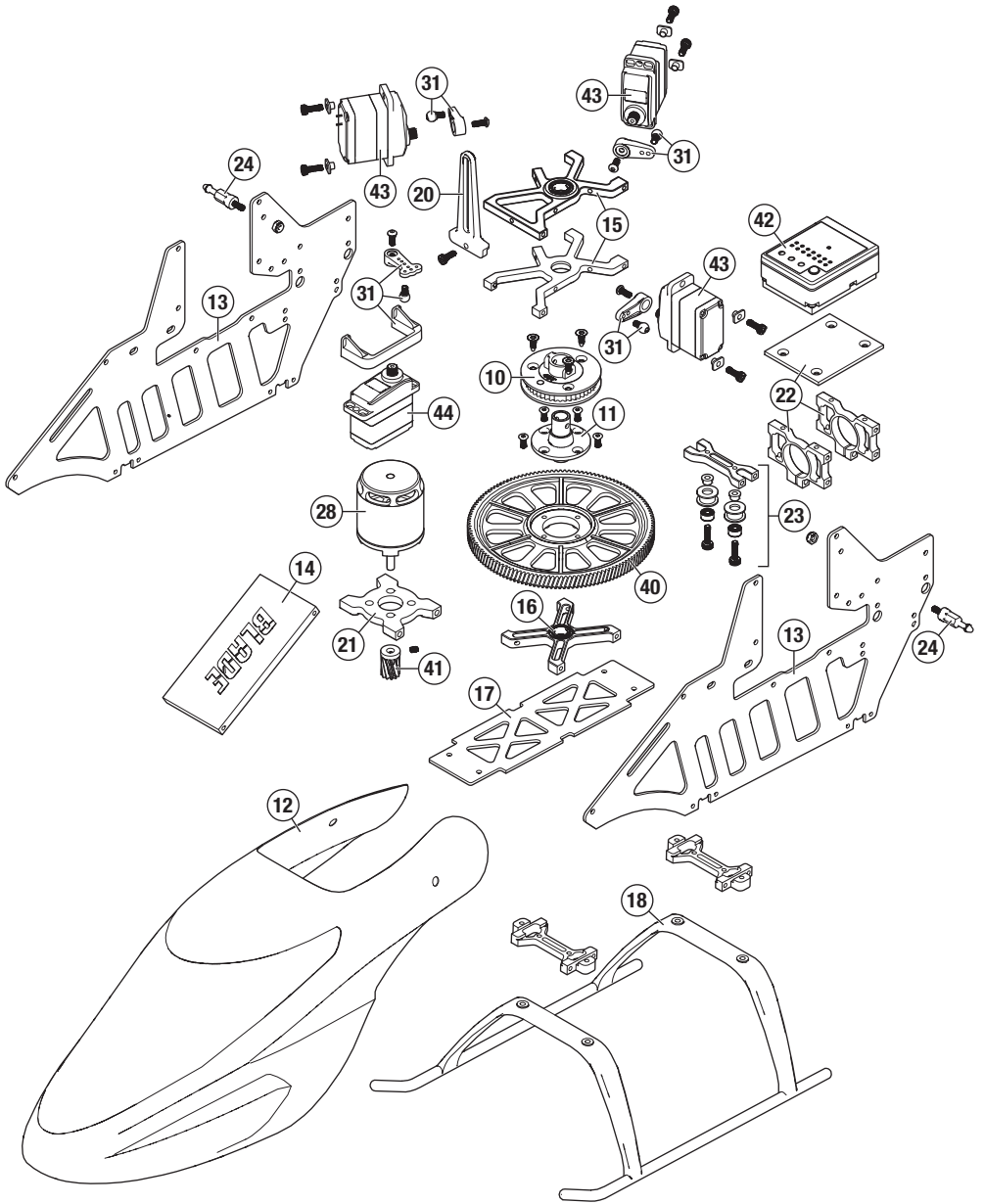
Ball Links	Make sure the plastic ball link holds the control ball, but is not tight (binding) on the ball. When a link is too loose on the ball, it can separate from the ball during flight and cause a crash. Replace worn ball links before they fail.
Cleaning	Make sure the battery is not connected before cleaning. Remove dust and debris with a soft brush or a dry lint free cloth.
Bearings	Replace bearings when they become notchy (sticky in places when turning) or draggy.
Wiring	Make sure wiring does not block moving parts. Replace damaged wiring and loose connectors.
Fasteners	Make sure there are no loose screws, other fasteners or connectors. Do not over tighten metal screws in plastic parts. Tighten screw so parts are mated together, then turn screw only 1/8th of a turn more.
Rotors	Make sure there is no damage to rotor blades and other parts which move at high speed. Damage to these parts includes cracks, burrs, chips or scratches. Replace damaged parts before flying.
Gyro	Make sure the AR7210BX is securely attached to the frame. Replace the double-sided tape when necessary. The helicopter will crash if the AR7210BX separates from the helicopter frame.

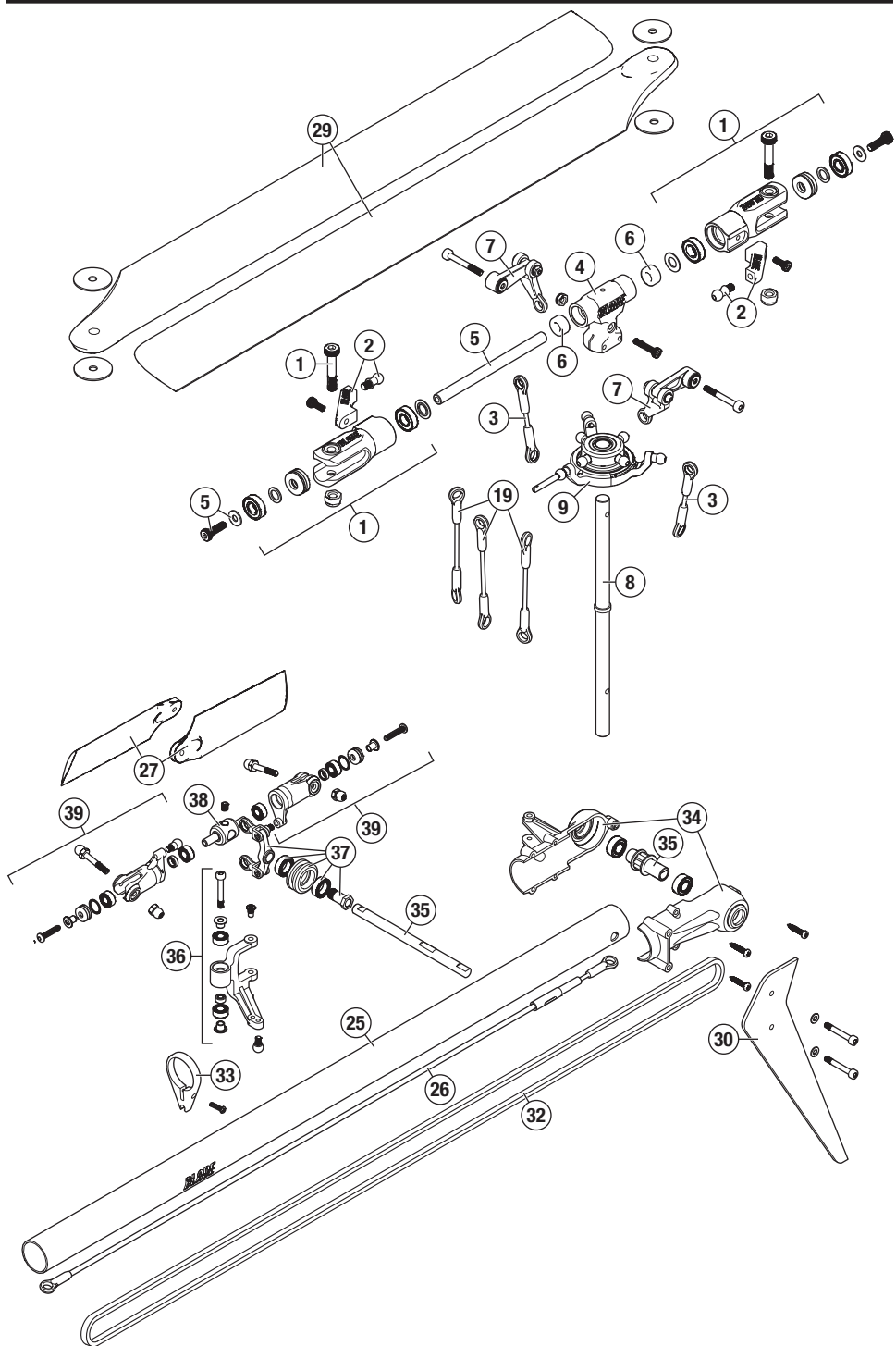
Troubleshooting Guide

Problem	Possible Cause	Solution
Helicopter will not bind to the transmitter (during binding)	Low flight battery or transmitter battery voltage	Fully charge or replace the flight battery and/or transmitter batteries
	AR7210BX is not in bind mode	Make sure the bind plug is connected to the AR7210BX BND/DAT port
	Transmitter is not in bind mode	Power on the transmitter while holding the Trainer/Bind switch. Hold the Trainer/Bind switch until binding is complete
	Transmitter too close to the helicopter during binding process	Power off the transmitter. Move the transmitter to a larger distance from the helicopter. Disconnect and reconnect the flight battery to the helicopter and follow binding instructions
Helicopter will not link to the transmitter (after binding)	Helicopter is bound to a different model memory (ModelMatch™ radios only)	Disconnect the flight battery. Select the correct model memory on the transmitter. Reconnect the flight battery
	Flight battery/Transmitter battery charge is too low	Replace or recharge batteries
AR7210BX will not initialize	The transmitter is powered off	Power on the transmitter
	Controls are not centered	Center elevator, aileron and rudder controls. Make sure the throttle is at idle
	Helicopter moved during initialization	Make sure the helicopter does not move during initialization. If necessary, shield the model from the wind until it initializes
Helicopter will not respond to the throttle but responds to other controls	Throttle not at idle and/or throttle trim is too high	Lower the throttle stick and lower the throttle trim
	The transmitter is not in normal mode or throttle hold is on	Make sure the transmitter is in normal mode and throttle hold is off
	The motor is not connected to the ESC or the motor wires are damaged	Connect the motor wires to the ESC and check motor wires for damage
	Flight battery charge is too low	Replace or recharge flight battery
	Throttle channel is reversed	Reverse the throttle channel on the transmitter
Helicopter power is lacking	Flight battery has low voltage	Fully charge the flight battery
	Flight battery is old or damaged	Replace the flight battery
	Flight battery cells are unbalanced	Fully charge the flight battery, allowing the charger time to balance the cells
	Excessive current is being drawn through the BEC	Check all servos and the helicopter motor for damage
	Tail drive belt tension is not correct	See "Checking Tail Drive Belt Tension" in this manual

Problem	Possible Cause	Solution
Helicopter will not lift off	Main rotor head is not spinning in the correct direction	Make sure the main rotor head is spinning clockwise. Refer to the motor control test
	Transmitter settings are not correct	Check throttle and pitch curve settings and pitch control direction
	Flight battery has low voltage	Fully charge the flight battery
	Main rotor blades are installed backwards	Install the main rotor blades with the thicker side as the leading edge
The helicopter tail spins out of control	Rudder control and/or sensor direction reversed	Make sure the rudder control and the rudder sensor are operating in the correct direction
	Tail servo is damaged	Check the rudder servo for damage and replace if necessary
	Inadequate control arm throw	Check the rudder control arm for adequate travel and adjust if necessary
	Tail belt is too loose	Make sure the tail drive belt tension is adjusted correctly
The helicopter wobbles in flight	Cyclic gain is too high	Decrease Dial 1 on the AR7210BX
	Headspeed is too low	Increase the helicopter's head speed via your transmitter settings and/or using a freshly charged flight pack
	Dampers are worn	Replace the main rotor head dampers

Exploded View





Parts List

#	Part #	Description
1	BLH4801	Aluminum Blade Grips
2	BLH4802	Aluminum Grip Arms
3	BLH4803	Grip Linkage Set
4	BLH4804	Aluminum Head Block
5	BLH4805	Spindle Set (2)
6	BLH4806	Dampners (4)
7	BLH4807	Aluminum Follower Arm (2)
8	BLH4808	Mainshaft (2)
9	BLH4809	Aluminum Swashplate
10	BLH4810	Front Drive Pulley 45t
11	BLH4811	Aluminum Drive Hub
12	BLH4812	Fiberglass Canopy (Teal)
13	BLH4814	C/F Main Frame
14	BLH4815	Aluminum Battery Tray
15	BLH4816	Aluminum Bearing Blocks (2)
16	BLH4817	Aluminum Lower Bearing Block
17	BLH4818	C/F Lower Plate
18	BLH4520	Landing Gear
19	BLH4819	Servo Linkage (3)
20	BLH4820	plastic Anti-Rotation Guide
21	BLH4821	Aluminum Motor Mount
22	BLH4822	Aluminum Tailboom Mount and C/F Plate
23	BLH4823	Aluminum Tail Belt Tensionor

#	Part #	Description
24	BLH4824	Aluminum Body Mount Posts
25	BLH4825	Tailboom (2)
26	BLH4826	Tail Pushrod (2)
27	BLH4827	Plastic Tailrotor Blades (2)
28	BLH4828	Motor 2350Kv
29	BLH4829	C/F Mainrotor Blades
30	BLH4830	C/F Tail Fin
31	BLH4831	Servo Arms and Linkage Balls (3) and tail servo mount
32	BLH4833	Tail Belt
33	BLH1660	Tail Pushrod Support Guides Set
34	BLH1663	Tail Case Set
35	BLH1665	Tail Rotor Shaft and Drive Pulley
36	BLH1667	Tail Rotor Pitch Lever Set
37	BLH1668	Tail Rotor Pitch Control Slider Set
38	BLH1669	Tail Rotor Hub Set
39	BLH1669	Tail Rotor Blade Grip/Holder Set
40	BLH1901	Helical Main Gear
41	BLH1904	Helical Pinion Gear, 12T
42	SPMAR7210BX	AR7210BX DSMX Flybarless Control System
43	SPMSH3050	Digital Cyclic Servo, 12 g, Metal Gear
44	SPMSH3060	Digital Tail Servo, 12 g, Metal Gear
	CSE010012200	Castle Creations Talon 35 Helicopter ESC

Optional Parts List

Part #	Description
BLH4832	Option C/F Tal Blades (2)
BLH4813	Option Canopy (Org-Grn-Yel)
EFLB9106S30	910mAh 6s 22.2v 30c Li-Po
	DX6i DSMX 6-Channel Transmitter Only
	DX6 DSMX 6-Channel Transmitter Only

Part #	Description
	DX7 DSMX 7-Channel Transmitter Only
	DX8 DSMX 8-Channel Transmitter Only
	DX9 DSMX 9-Channel Transmitter Only
	DX18 DSMX 18-Channel Transmitter Only

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 at 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 Li-Po batteries to Horizon. If you have any issue with a Li-Po 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/	4105 Fieldstone Rd Champaign, Illinois, 61822 USA
	Horizon Product Support (Product Technical Assistance)	productsupport@horizonhobby.com 888-959-2304	
	Sales	sales@horizonhobby.com 888-959-2304	
United Kingdom	Service/Parts/Sales: Horizon Hobby Limited	sales@horizonhobby.co.uk +44 (0) 1279 641 097	Units 1-4 , Ployters Rd, Staple Tye Harlow, Essex, CM18 7NS, United Kingdom
Germany	Horizon Technischer Service Sales: Horizon Hobby GmbH	service@horizonhobby.de +49 (0) 4121 2655 100	Christian-Junge-Straße 1 25337 Elmshorn, Germany
France	Service/Parts/Sales: Horizon Hobby SAS	infofrance@horizonhobby.com +33 (0) 1 60 18 34 90	11 Rue Georges Charpak 77127 Lieusaint, France
China	Service/Parts/Sales: Horizon Hobby – China	info@horizonhobby.com.cn +86 (021) 5180 9868	Room 506, No. 97 Changshou Rd. Shanghai, China 200060

FCC Information

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.

This product contains a radio transmitter with wireless technology which has been tested and found to be compliant with the applicable regulations governing a radio transmitter in the 2.400GHz to 2.4835GHz frequency range.

IC Information

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

(1) this device may not cause interference, and (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:

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

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 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.



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US 7,391,320. Other patents pending.

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