

XTIM

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Avitron[®] v2.0

www.MyBionicBird.com

INSTRUCTION MANUAL



To read imperatively before use
Some adjustments are required during first flight.

14+

This IS NOT A TOY !

THANK YOU FOR PURCHASING AVITRON
The first bionic bird !

- Ultra light weight 8.85 g
- Very powerful motor with aluminium heat sink
- Range up to 100 yards
- Spread Spectrum 2.4 GHz radio with auto-detection
- Extremely precise power control (128 steps)
- Sharp & immediate directional control for aerial stunts
- Electronic protection against motor heating and battery damage
- Flies up to 1 mile in a single flight
- Up to 75 charges on one set of 6 batteries
- Hybrid Lithium Polymer battery included
- Controller auto power-off (battery saving)
- Adjustable tail angle for fast or slow flights
- Up to 8 min flight , at full power, on a single charge
- Turbo charging system : 12 min
- Multi-frequency system / Auto-channel-selection (128 players at same time)



WARRANTY : This product is warranted against defects in material and workmanship under normal use for thirty (30) days from the date of purchase (Keep your purchase receipt).

For any questions regarding this product, please contact our customer service by email at :

contact@mybionicbird.com.

*You can find video instructions at **www.mybionicbird.com**.*

PARTS INCLUDED :



1 AVITRON



1 spare pair of wings



1 controller



1 bag of aluminum tape pieces
to balance wings

BATTERIES :

Avitron (onboard) : 55 mAh Li-Polymer (20C,800mA) - included

Controller : 6AA, 1.5 volts - NOT INCLUDED

PATENT :

France 0855430 date 08/05/08 and 0901629 date 3/04/09

PCT FR2009/051560

WARNING :

This product complies with the following standard and complies with FCC part 15 (2008) ; R&TTE 2008 (EN300440-2 . EN301489-1 . EN301489-3) ; DEEE (WEEE) directive 2002/96/EC.

FCC ID : XTR 301142A

FCC ID : XTR 301142B

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

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.*

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



Users should keep and retain this manual for future reference.

Keep the packaging since it contains important information.
Keep name and address.

SAFETY PRECAUTIONS :

- Not suitable for children under 36 months, small parts may be swallowed.
- Do not play next to an animal or a person.
- Do not use near electrical lines or during a storm.
- Do not fly AVITRON near electrical lines, trees, buildings and any other obstacles.
- Keep away from water.
- Never fly or follow AVITRON in the streets.
- Keep AVITRON away from face and eye.
- Never put your fingers close to AVITRON when it moves.
- Always use the transmitter charger included in this equipment.
- Always place the transmitter on the "OFF" position when not flying.

BATTERY CAUTIONS :

Works with 6 AA/LR6 1.5V batteries (not included).

Works with 1 rechargeable LI-PO (lithium Polymer) battery and 1 2.4 GHz transmitter (included).

Only batteries of the same or equivalent type as recommended are to be used ; do not mix old and new batteries, different types of batteries (standard carbon zinc, alkaline or rechargeable) or rechargeable batteries of different capacity.

Rechargeable batteries are only to be charged by an adult.

Rechargeable batteries are to be removed from from the toy before being charged

Respect the correct polarity (-) or (+)

Do not try to recharge non-rechargeable batteries.

Do not throw the batteries into the fire.

Replace all batteries of the same type/brand at the same time.

The supply terminals are not to be short-circuited.

Remove exhausted batteries from your AVITRON.

Batteries are only to be replaced by an adult.

Only use the battery charger provided with the box to charge the LI-poly battery in AVITRON.

DEEE :

When this appliance is out of use, please remove all batteries and dispose of them separately. Bring electrical appliances to the local collecting points for waste electrical and electronic equipment.

Do not throw in domestic refuse.



WARNING :

CHOKING HAZARD- Small Parts
Not for children under 3 years.

PRODUCT SPECIFICITIES :

Length :	6,69"
Wingspan :	12,90"
Weight :	8.85 g
Radio :	2 channels
Battery not included :	6 AA batteries
Rechargeable battery pack :	Li-poly 55 mAh
Charger :	Included in controller
Flight Duration :	8 min (Single charge)
Charge time :	12 min
Range :	up to 100 yards
Frequency :	2.4 GHz - Multifrequency
Number of sub-frequencies (players at same time) :	128
Unloaded motor speed :	53,000 RPM
Full loaded motor speed :	35,000 RPM
Wing flapping speed :	up to 17 flaps/sec.
Wing amplitude :	55°
Ratio weight/wing area :	3.22 g/dm ²
Maximum static thrust :	9 g
Skill level :	Beginner

INSTRUCTION MANUAL

MANUFACTURER NOTES :

*The suitcase packing must be kept and used to store and carry the product in good conditions. This will increase product lifespan a lot. Before to put the bird into the box, use the controller to adjust wing position. NEVER TRY TO MOVE WINGS MANUALLY !

*This product was tested for a lifespan of hundreds of cycles in flight; however it remains a high technology product that should be handled with care when not flying. Avoid seizing it by the wings or tail, place it carefully and gently on the charging slot, proceed gently also when replacing wings.

*It is strongly recommended not to let children handle the bird, or pick it up from the ground after a flight. On the other hand, according to their aptitude, they can certainly try to control it in the air, under adult monitoring. Or simply enjoy watching Avitron flying !

I - UNPACKING YOUR AVITRON

Check your product is complete as described on page 2.

II - INSTALLING BATTERIES IN THE TRANSMITTER



Figure 1



Figure2

III - TRANSMITTER FUNCTIONS

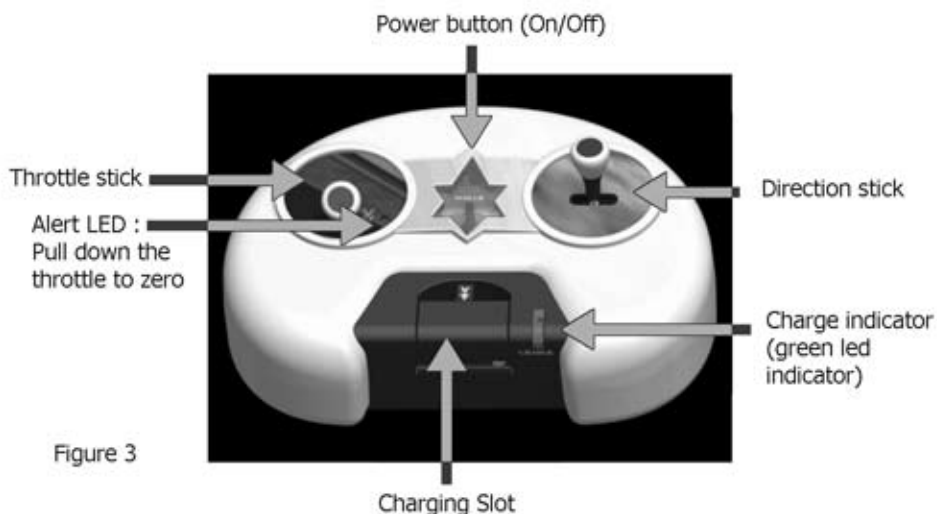


Figure 3

Left stick : throttle stick : push the throttle stick up to gain power and raise the flight of the bird.

Right stick : direction stick -push momentarily left or right. Avoid oversteering.

Automatic power-off function :

If not in use for 10min, the transmitter will turn itself off (saving battery power). Just push the power button to turn it on.

Transmitter low batteries warning : if the power button starts flashing, you should replace the batteries.

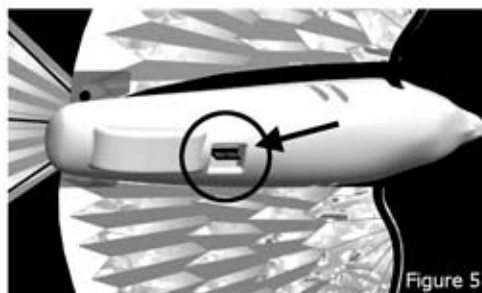
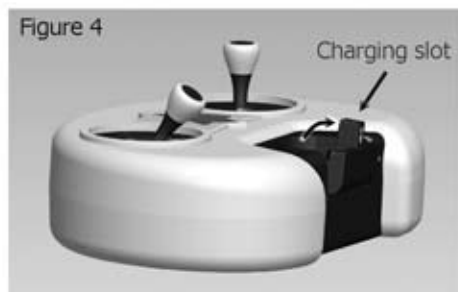
Warning : ensure that the + and - polarities match the illustrations inside the battery compartment (Figure 2).

Note: If transmitter batteries become weak during bird charging process, charging will be stopped and AVITRON will not be fully charged. It is impossible to recharge the bird without replacing the batteries.

The control of the bird is effective until the very end of the flight.

IV - CHARGING AVITRON FOR ITS FIRST USE

1) Open the charging adapter on the transmitter. Turn on the power of the transmitter by pushing on the power button.



2) Insert AVITRON into the charging slot of the transmitter. Be careful to insert Avitron in the right direction as shown. (Figure 6)



The LED indicator (green light) is flashing and the star button turns off: AVTRON is charging.
3) When the LED indicator (green light) stops flashing and the light remains green, AVITRON is fully charged.

4) Then take your AVITRON off and close the charging slot. The power button will light ON.

You are ready to fly your AVITRON !

LATER CHARGES:

NOTE : It is not compulsory to turn AVITRON off prior to charging. You can go on flying immediately after the bird is fully charged, without starting up the bird again. However, **it is strongly recommended**, because the charge duration is longer in that case (16 min instead of 12 min when bird is off).

If the batteries become weak during the charging process (the power button will flash rapidly and the charge light will turn off) the charging has now stopped. YOU MUST NOW REPLACE THE BATTERIES (see instructions above) and repeat the process of charging Avitron.

V - FLYING YOUR AVITRON

Conditions of use :

Indoor use doesn't require any conditions except a room big enough to fly around without obstacle.

Outdoor use requires adapted weather conditions, ideally no wind at all (recommended for beginner, and compulsory to balance wings, see below), and no rain.

For an experienced user, wind up to 8 mph is acceptable, if it's steady. So it's better to choose an open area, far from trees or buildings, which could create whirlwinds.

Avoid flying near a road, or water, where it could fall by accident.

A : Turn on / automatic connection

Turn the transmitter ON (power button) and leave the throttle stick in the lowest position. The blue LED indicators lights up..



Turn the bird ON (switch is located on top of body, ON position is forward). The bird LED will blink 3 times, then become steady.

They are connected.

If the throttle stick is not in its lowest position the alert red LED will blink and you must pull it back to its lowest position to activate the transmitter (figure 7).

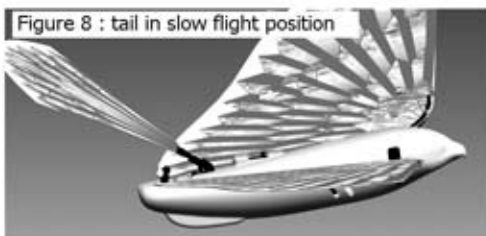
NOTE: If the bird doesn't bind (LED keep on blinking), read chapter VI- Binding process.

B - Adjusting the tail

The tail angle is adjustable (5 notches), making possible to adjust the speed of Avitron. To change the notch, just push or pull on the base of the tail.

* For indoor flights, in a confined space, or for slow flights: set the tail in a high position (choose the notch n° 3, starting from the bottom, among the 5 possible positions). (see figure 8)

The notches 4 and 5 are not recommended at begin.



* For outdoor flights, in a big space or for fast flights: adjust the tail in a low position (using the notch 1 or 2). (See figure 9) Knowing that : Notch 2 is recommended for beginners. Notch 1 is for best performance but requires a bit of practice, and wings adjustment (see below).

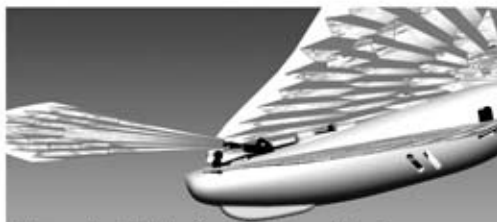


Figure 9 : Tail in fast flight position

Warning : When picking up the bird after landing, always check that the tail hasn't moved to another notch. If so, set it back again.

C- Flying the AVITRON

- * Launching : Push the throttle stick $\frac{3}{4}$ of the way up. Always point the AVITRON facing the wind, launch the bird from your hand with a gentle horizontal toss. Let it gain some altitude before trying any turns. If it flies downward, you can try with the tail one notch higher.
- * Gliding flight : To make Avitron glide : gain altitude, reduce speed and get the bird flying straight, then cut the throttle.
- * Out of range : If Avitron flies out of range of the transmitter, just get closer to the bird and it will connect again immediately.
- * Emergency landing : If you need to land Avitron quickly (in a risky situation), turn right or left to maximum and cut throttle, then release the direction stick. The AVITRON will nosedive towards the ground. Generally, doing tight turns will cause the AVITRON to descend. It is a good way to control its flight.

WARNING : do not keep the direction stick at maximum on one side for a long time, even when the bird is not flying because it could cause the steering micro-motor to overheat.

- * End of flight : When the AVITRON flight becomes less powerful it is time to recharge it (see above). When the LIPO battery inside bird is 95% empty, the LED indicator on the Avitron body will start flashing quickly and the power to the wings will be cut by half; then you have only 10 seconds to land the AVITRON. After these 10 seconds the bird will stop flapping and you must recharge it.
- * Battery power off: It may happen sometimes at the end of the flight, that the battery voltage become too low, and it powers off automatically (bird LED is Off), although switch is still On. No problem, when you put the bird back on charge, it will be reactivated.

D- First flight - Adjusting the wings

From the very first flight, it is essential to check the wings balance, to adjust it if needed. To do this, it needs to fly outdoor without any wind, and set the tail in flat position (notch 1).

If while flying, you notice the following unbalanced flight :

- Immediately when launched, the bird turns to one side and go directly to the ground (big unsteadiness).
 - The direction stick is in the middle position but the bird turn left or right in small circles.
 - It seems that the bird turns more easily to one side than to the other.
- Then you will have to trim the wings.

A bag with small pieces of aluminium tape (ballast) is supplied with your Avitron. You must ballast opposite wings to the turning side you observed. If the bird tends to turn to the right, add some weight to the left wing: Take one of the aluminium tape piece and stick it near the tip of the right wing, folding over the wing structure. See figure 10. →

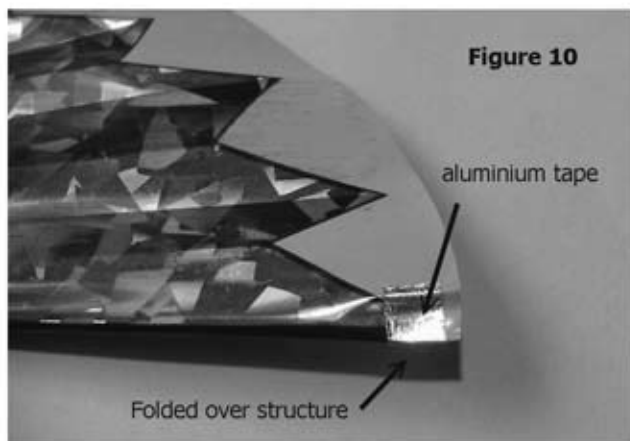


Figure 10

If the bird tends to turn to the left, add the tape on the right wing same way. Try flying the bird again, and if necessary, add another tape upon first one. Repeat process until you get a straight flight or a slight turn to the other side than observed first. Your Avitron is now balanced and its performance is optimized.

NB: - Avitron is pre-balanced in factory, there may be some tape already stuck on one wing. If a wing already have too much ballast, choose to remove a tape on this wing rather than to add one on the opposite wing.

- Flying with tail set in a high position may require a different wing adjustment.

In order to fly the bird with tail in high position in a confined space and keep a precise control, it is recommended to do a very precise wing adjustment with the tail in that position.

E - Battery protection :

The electronic protection on the LI-PO battery prevents it from irreversible damage. It operates (by cutting off the power) in the following 2 cases :

- A short-circuit
- When the battery discharges below 2.5 Volts.

This happens inevitably when you forget to switch off your Avitron, and the battery keeps on discharging slowly for hours. Then, the body LED will switch off (even though the power switch is still ON). You just need to charge Avitron again to reactivate the battery. During charge, the bird LED will start lighting again).

WARNING: if AVITRON doesn't light up, whatever the switch position, try to charge it. (Probably the battery protection system has been activated)

F - Motor protection :

If the wings get blocked by an object while the throttle is at its maximum, the over-heating protection device of the motor will cut off the power automatically. In order to reactivate AVITRON, push the throttle back to lowest position.

VI - BINDING PROCESS

AVITRON allows several persons to fly at same time in the same place, so there is a frequency coding process done in factory to bind each bird with its own transmitter. Then, at each start, the bird recognize its transmitter, and automatically connect to it. If this doesn't work, you can do manually a new binding process, following that steps:

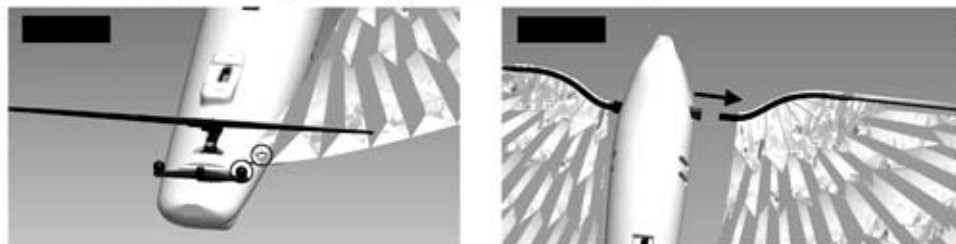
- Switch off both bird and transmitter
- Push the steering stick all the way to the right and hold it / switch transmitter on / release the stick. The blue LED starts blinking.
- Switch the bird on. The 2 LEDs become constant. Bird and transmitter have been binded conclusively. The connection will occur automatically at each start from now.

WARNING: The binding process must be done without any other bird or transmitter switched on in the neighbourhood, or you may create an altered frequency code, and the transmission could be unstable and spotty. If it happens, do the process again.

VII - REPLACING THE WINGS

If a wing is broken, you can replace it with the spare set of wings included in the box. Lift the tail to the maximum notch. Pinch one side of the wing, at the back of the wing where the wing is clipped to the round knob, and take it off the knob (as shown on Figure 11). Then detach the front of the wing like so hold the wing structure firmly and pull it out so that it comes out the slot (Figure 12).

It is not necessary to change both wings, when just one is broken.



Take the new wing and ensure to select the right wing for the right side of the bird and the left wing for the left side of the bird. Start by inserting the wing structure in the slot, you should hear a "clik" which means that the wings is correctly inserted (Figure 12).

Clip the back of the wing to the round knob, underneath the tail (Figure 11).

VIII - REPLACEMENT OF OTHER PARTS

If ever the foam body or other parts were destroyed, please feel free to contact our customer's service at : contact@mybionicbird.com to get replacement parts and instructions on how to replace them.

WARNING : To preserve the Li-poly battery as long as possible, we suggest that you NEVER let the bird discharge completely, when not in use. Charge the bird a few minutes and turn it OFF before putting it away.

IX - FLYING SEVERAL AVITRONS AT THE SAME TIME

You can fly up to 128 AVITRONS at the same time ! Thanks to the Spread spectrum frequency coding technology, you will not have to worry about interferences. Each player can start and operate his Avitron without taking care of the others.

It might happen, in theory, that 2 codes happen to be similar (but it is very unlikely), and that they interfere one with the other. If so, you just need to do the manual binding process (see chapter VI) with one of the 2 Avitrons and its transmitter, in order to change the code.

Warning: In this case, there should be no other bird or transmitter switched on around you during the binding process.

IMPORTANT NOTES ABOUT THE USE OF AVITRON:

- **Do not leave the bird on charge** on the transmitter when you do not use it anymore. Indeed, when the charge is completed, and that the auto swith off delay (10 minutes) of the transmitter has expired, it will switch off. Then, the charge circuit not being power supplied anymore, a tiny current will flow out from the bird battery into the circuit (in reverse direction) and **it will slowly discharge**.

- It is strongly **recommanded to charge** the bird at least at 50% of the battery capacity **before to store** it after use. Or the battery life will be shortened a lot.

- **At cold temperature**, the batteries or rechargeable batteries you use inside the transmitter are loosing most of their power. They aren't able to supply enough power to fully charge the bird. It is advised to charge the bird indoor (warm temperature), then to go ot for flying.

- The motor and clockworks inside Avitron are very efficients, with very tight tolerance. They need a training period during which they will get free of frictions. The maximum power and flying time will be reached after about ten flights.

LED indicators table

TRANSMITTER	
Power Button	Off
	Switched off or bird charging
	Blue constant light
	Switched On, ready to operate
	Blue blinking
	Binding process started
	Blue fast blinking
	Used batteries
	Replace the batteries
Charge LED	Green blinking
	Bird charging
	Green constant light
	Bird fully charged
	Remove bird from charge gate
Alert LED	Red blinking
	Throttle stick not activated
	Pull the stick back to zero
BIRD	
Internal LED	Blue constant light
	Connected to transmitter
	Blue blinking
	Not connected to transmitter
	Blue fast blinking
	Low battery
	Charge the bird
	Ready to fly
	No light but switched On
	Battery protection activated
	Put the bird on charge
	* <i>If the transmitter is already On (blue constant), you must do a manual binding process.</i>