

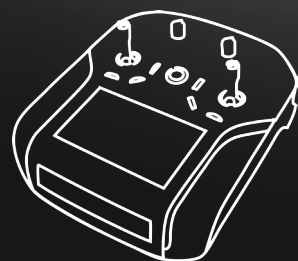
V6.08

WEATRONIC®

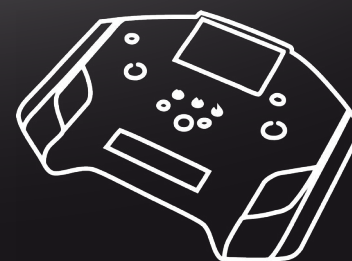


User Manual

2.4Dual FHSS
FREQUENCY HOPPING SPREAD SPECTRUM



BaT60®



BaT64®



BAT60 and BAT64 user manual (software version 6.08, December 2015)

Introduction

Thank you for hooking up with this fantastic product to fly, drive and enjoy your model. Welcome to the weatronic family!

The development, production and assembly of all weatronic products is based in Germany. All components are tested with the highest German standards. During the development process reliability and noise immunity are considered the most. Quality and reliability are the top priorities for our specialists in the field of digital signal processing and satellite communications. Their knowledge and close cooperation with universities take care to be all the time up to date.

Please always check www.weatronic.com for more information about the BAT transmitter series. Under the section support videos you will find all the small videos mentioned here in this manual. Keep the manual up to date by frequently checking our web-page. Also we strongly recommend to read this manual completely in order to avoid any misuse. Especially always mind the safety instructions.

Main features of the weatronic® transmitter

- ◇ A bidirectional and true redundant 2.4Ghz system with 2 integrated patch antennas is providing a tremendous operation distance (up to 3 miles, if unobstructed view)
- ◇ Up to 28 programmable controls and the possibility to fully control up to 64 servos
- ◇ Huge 5inch color LCD touch screen
- ◇ Innovative new weatronic programming style - no more limits to channels or predefined and fixed structures
- ◇ Intelligent Battery Management System
- ◇ up to 6 Li-Ion batteries and each with 3000mAh capacity (brand manufacturer)
 - » Build in charger including individual cell monitoring for capacity evaluation
 - » Huge charging voltage range (10-20 volts)
 - » Additional measurement of temperature and current
 - » 3 cells are connected parallel as the main power supply
 - » One cell is always reserved as a 25% reserve, this job is rotating - thus ensuring uniform aging of all cells
 - » Charging during flight is possible
 - » Each cell has its own overload protection
 - » Authorization under EU law
- ◇ Separation of the Flight Controller and the Linux PC - the separation of this two elements ensures maximum safety and offers the user additional benefits
- ◇ Reliable quality control - each single transmitting module is individually tested before installation (transmitting and receiving performance)
- ◇ Using 80 frequency channels (maximum use of all frequency channels allocated in the 2.4 GHz band)
- ◇ Frequency channel hopping rate: 100 Hz (every 10 ms - 100 times per second)
- ◇ Built in Wi-Fi, the user interface can be displayed simultaneously on every standard browser via Wi-Fi.
- ◇ Newly designed, innovative sticks
 - » Proprietary gimbals design with 9 ball bearings
 - » Innovative throttle- / brake handle concept
 - » Easy and quick adjust of all 4 modes
 - » Tension behavior and ratchet behavior individually adjustable
 - » Interchangeable sticks and lengths
- ◇ 3D Hall sensors on the sticks
 - » Wear-free and thus unsusceptible to faults
 - » 100% digital solution (digital interface - no losses by digitizing)
 - » True 12-bit resolution, 4096 points
 - » Temperature Compensated
- ◇ Data recording on internal micro SD memory card (only usable for the weatronic service team)
- ◇ External connections are recessed, thus better protection against bending and impurities:
 - » 2 x standard USB Ports
 - » 3,5 mm jack for stereo headphones
 - » 3,5 mm jack for PPM-signal
 - » USB mini B port
 - » Charge plug
- ◇ Audio output through built-in speaker
- ◇ Integrated GPS offers UTC time stamp and features like the "look and find" option.
- ◇ Over 1,000 model memory (only limited by capacity of the SD-card)
- ◇ weatronic® is the first manufacturer, who implements the ETSI standard EN 300 328 V1.8.1, „listen before talk“

"MADE IN GERMANY"

NOTE: All yellow underlined topics are new. Or lately available as a hardware upgrade.

NOTE: All gray marked software options are still under field-testing and are not yet activated.

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1. Scope of supply

- ▶ BAT 60 hand-held radio or BAT 64 tray-type radio, many radios are fully customized when they are delivered to our customers. But nevertheless there are some standards:
 - Mode 1 / 3 or Mode 2 / 4 . More information: [„8. Mechanical stick adjustment“ \(page 17\)](#)
 - the toggle switches are already mounted. So if not customized there is a standard for the BAT 60 hand-held and the BAT 64 tray-type version
 - » BAT 60 :2 x 2-Position short toggle switch and 2 x 3-Position long toggle switch
 - » BAT 64: 5 x 2-Position short toggle switch and 6 x 3-Position long toggle switch
- ▶ High quality and robust aluminum case with die cut foam inlay
- ▶ Switching Power Supply with UK/US/EU/AU adapter
- ▶ Allen key set (necessary for interchanging the feedback parts and open the radio)
- ▶ weatronic “feedback part” standard set (SL, CD, CS, CH, one of each, check [„8.2. How to adjust the “stick characteristics” / the “mode”“ \(page 18\)](#) for more information)
- ▶ Neck strap (for center attachment for BAT 60) OR Cross belt (for perfect hanging for the BAT 64)
- ▶ “setup wizard” Quick Guide (printed) for easy overview and first programming adjustments



BAT64



BAT60



2. Safety instructions

The weatronic® 2.4 Dual FHSS - Remote Control System has been developed exclusively for the operation of radio-controlled model cars, model aircraft and ship models and is only allowed for this use. weatronic® assumes no liability for improper use. Young people under 14 years may operate remote controlled models only under adult supervision. Please operate your model only on intended areas.

Always be aware of the local airfield rules, in doubt ask local club members. Be careful during operation of your model. Even small models can be very harmful and cause serious injuries and death! Especially rotating blades and propellers or hot exhausts can easily cause injuries. Never operate your model if your model is not fully functioning.

Be considerate to other pilots and arrange with each other. Stay in reach to other pilots, so you can communicate about your landing and take-off approaches in order to avoid accidents. Always stay away from Non-Fly zones and never fly over spectators or any persons who are near the airfield.

The weatronic® 2.4 Dual FHSS system can be used simultaneously with other 2.4 GHz systems, and also with 35/40/72 MHz systems. The frequency control check is no longer necessary within the 2.4GHz Band. More than 120 weatronic® 2.4 Dual FHSS systems can simultaneously be operated.

NOTICE

Before operation always perform the following routine checks:

- ✦ Fix your model in place.
- ✦ Keep a safe distance.
- ✦ Mind bystanders, especially spectators who are not aware of the potential dangers!
- ✦ Indicate sources of danger, such as rotating blades and propellers or the hot exhaust of jet-turbines, etc.
- ✦ First of all switch on your transmitter. Then turn on the receiver in the model.
- ✦ Before using your model test all functions, in particular their moving direction and all surface deflections should be checked. Do not operate if this is not correct!
- ✦ Check the failsafe-position and check the antenna position inside the model. Do not operate if this is not correct!
- ✦ Also check your batteries to be sufficiently charged. Do not operate if this is not correct!

NOTICE

Consider the following points in order to charge your radio in a perfect way:

- ✦ Always use a proper power supply to charge your radio. The power supply which comes with your radio is perfect. weatronic assumes no liability for damage due to a wrong power supply.
- ✦ A car adapter is also available. Just contact your support dealer or weatronic directly for more information.
- ✦ Never modify the internal battery board in any way.
- ✦ During charging never open the case of the radio.
- ✦ Charging is only recommended if outside temperature is between 0° and 35° Celsius.
- ✦ Do not short-circuit the battery, as it may generate heat. To avoid short-circuiting, do not let the battery come in contact with metal objects at any time.
- ✦ Do not put the battery into a fire, as it may swell or explode.
- ✦ Do not use near any type of heat source. When battery leaks electrolyte or emit a strange smell, discontinue use and move battery away from the heat source.
- ✦ Be aware of rotating blades or propellers! Unintended activating of the motor is possible. They can be very harmful and cause serious injuries like cutting fingers or even cause death.
- ✦ ALWAYS remove such rotating parts from the motor to avoid danger especially during programming and adjusting your model.



Be aware of rotating blades or propellers! Unintended activating of the motor is possible. They can be very harmful and cause serious injuries like cutting fingers or even cause death. ALWAYS remove such parts from the motor to avoid danger especially when programming and adjusting your model. ALWAYS take care of casual bystanders, because they don't know about the potential danger!



Since the device contains small parts which can be swallowed, an increased level of care is required, especially for babies and infants. Not recommended for children under 3 - small parts may be inhaled or swallowed.

Academy of Model Aeronautics National Model Aircraft Safety Code

Effective January 1, 2014

- A. **GENERAL:** A model aircraft is a non-human-carrying aircraft capable of sustained flight in the atmosphere. It may not exceed limitations of this code and is intended exclusively for sport, recreation, education and/or competition. All model flights must be conducted in accordance with this safety code and any additional rules specific to the flying site.
1. Model aircraft will not be flown:
 - (a) In a careless or reckless manner.
 - (b) At a location where model aircraft activities are prohibited.
 2. Model aircraft pilots will:
 - (a) Yield the right of way to all human-carrying aircraft.
 - (b) See and avoid all aircraft and a spotter must be used when appropriate. (AMA Document #540-D.)
 - (c) Not fly higher than approximately 400 feet above ground level within three (3) miles of an airport without notifying the airport operator.
 - (d) Not interfere with operations and traffic patterns at any airport, heliport or seaplane base except where there is a mixed use agreement.
 - (e) Not exceed a takeoff weight, including fuel, of 55 pounds unless in compliance with the AMA Large Model Airplane program. (AMA Document 520-A.)
 - (f) Ensure the aircraft is identified with the name and address or AMA number of the owner on the inside or affixed to the outside of the model aircraft. (This does not apply to model aircraft flown indoors.)
 - (g) Not operate aircraft with metal-blade propellers or with gaseous boosts except for helicopters operated under the provisions of AMA Document #555.
 - (h) Not operate model aircraft while under the influence of alcohol or while using any drug that could adversely affect the pilot's ability to safely control the model.
 - (i) Not operate model aircraft carrying pyrotechnic devices that explode or burn, or any device which propels a projectile or drops any object that creates a hazard to persons or property.

Exceptions:

 - Free Flight fuses or devices that burn producing smoke and are securely attached to the model aircraft during flight.
 - Rocket motors (using solid propellant) up to a G-series size may be used provided they remain attached to the model during flight. Model rockets may be flown in accordance with the National Model Rocketry Safety Code but may not be launched from model aircraft.
 - Officially designated AMA Air Show Teams (AST) are authorized to use devices and practices as defined within the Team AMA Program Document. (AMA Document #718.)
 - (j) Not operate a turbine-powered aircraft, unless in compliance with the AMA turbine regulations. (AMA Document #510-A.)
 3. Model aircraft will not be flown in AMA sanctioned events, air shows or model demonstrations unless:
 - (a) The aircraft, control system and pilot skills have successfully demonstrated all maneuvers intended or anticipated prior to the specific event.
 - (b) An inexperienced pilot is assisted by an experienced pilot.
 4. When and where required by rule, helmets must be properly worn and fastened. They must be OSHA, DOT, ANSI, SNELL or NOCSAE approved or comply with comparable standards.

B. RADIO CONTROL (RC)

1. All pilots shall avoid flying directly over unprotected people, vessels, vehicles or structures and shall avoid endangerment of life and property of others.
2. A successful radio equipment ground-range check in accordance with manufacturer's recommendations will be completed before the first flight of a new or repaired model aircraft.
3. At all flying sites a safety line(s) must be established in front of which all flying takes place. (AMA Document #706.)
 - (a) Only personnel associated with flying the model aircraft are allowed at or in front of the safety line.
 - (b) At air shows or demonstrations, a straight safety line must be established.
 - (c) An area away from the safety line must be maintained for spectators.
 - (d) Intentional flying behind the safety line is prohibited.
4. RC model aircraft must use the radio-control frequencies currently allowed by the Federal Communications Commission (FCC). Only individuals properly licensed by the FCC are authorized to operate equipment on Amateur Band frequencies.
5. RC model aircraft will not knowingly operate within three (3) miles of any pre-existing flying site without a frequency-management agreement. (AMA Documents #922 and #923.)
6. With the exception of events flown under official AMA Competition Regulations, excluding takeoff and landing, no powered model may be flown outdoors closer than 25 feet to any individual, except for the pilot and the pilot's helper(s) located at the flightline.
7. Under no circumstances may a pilot or other person touch an outdoor model aircraft in flight while it is still under power, except to divert it from striking an individual.
8. RC night flying requires a lighting system providing the pilot with a clear view of the model's attitude and orientation at all times. Hand-held illumination systems are inadequate for night flying operations.
9. The pilot of an RC model aircraft shall:
 - (a) Maintain control during the entire flight, maintaining visual contact without enhancement other than by corrective lenses prescribed for the pilot.
 - (b) Fly using the assistance of a camera or First-Person View (FPV) only in accordance with the procedures outlined in AMA Document #550.
 - (c) Fly using the assistance of autopilot or stabilization system only in accordance with the procedures outlined in AMA Document #560.

C. FREE FLIGHT

1. Must be at least 100 feet downwind of spectators and automobile parking when the model aircraft is launched.
2. Launch area must be clear of all individuals except mechanics, officials, and other fliers.
3. An effective device will be used to extinguish any fuse on the model aircraft after the fuse has completed its function.

D. CONTROL LINE

1. The complete control system (including the safety thong where applicable) must have an inspection and pull test prior to flying.
2. The pull test will be in accordance with the current Competition Regulations for the applicable model aircraft category.
3. Model aircraft not fitting a specific category shall use those pull-test requirements as indicated for Control Line Precision Aerobatics.
4. The flying area must be clear of all utility wires or poles and a model aircraft will not be flown closer than 50 feet to any above-ground electric utility lines.
5. The flying area must be clear of all nonessential participants and spectators before the engine is started.

3. Technical data

Transmission:	adaptive frequency hopping operation with "listen before talk" function	
Frequency range:	2.401 to 2.4835 GHz	
Hopping-frequencies:	80	
Hopping-speed:	10ms / 100Hz	
Receiving Sensitivity:	-100 dBm	
Output Power:	20 dBm (100 mW)	
Antennas:	2 x patch antennas (angle of radiation > 180°)	
Resolution of the servo outputs:	4096 steps	
"Channels":	Not limited to "channels" anymore - check chapter 20 for detailed information about the new weatronic programming philosophy	
Display:	5 inch color LCD with a capacitive touch screen and a resolution of 800 x 480 pixel	
Battery:	4 x Li-Ion à 3000mAh with build in charger and battery management, available upgrade for 6 cells „21.3.1. Battery Manager“ (page 76)	
Power supply:	10,0 - 19,0 Volt	
Temperature range:	-10 °C to +60 °C / 14°F to 140°F, non-condensing	
Dimensions:	BAT 64: 278 x 350 x 72mm, 10.9" x 13.8" x 2.8"	BAT 60: 218 x 195 x 55 mm, 8.58" x 7.68" x 2.16" (L x W x H)
Weight:	BAT 64: 1,98kg, 69.8oz	BAT 60: 1,3kg, 45.8oz
Firmware:	upgrade via USB	
Software:	upgrade via USB	
Extras:	integrated GPS, built in Wi-Fi	
Optional extras:	Blue-tooth, Vibration, stick switches	
Stick technology:	Hall sensors and adjustable stick characteristics	
Stick resolution:	12bit encoding of the magnetic field	
Audio output:	Internal speaker, 3,5mm stereo audio out	
Connectors:	2 x USB, 1 x USB mini, 3,5mm jack for PPM in/out signal, 3,5mm jack for headphone, standard charge plug, micro SD card slot	
weatronic disposal number:	905 344 19 WEEE	
FCC ID:	BAT 64: in progress (check www.weatronic.com)	BAT 60: W3X2754-60
IC :	BAT 64: in progress (check www.weatronic.com)	BAT 60: 11388A-600

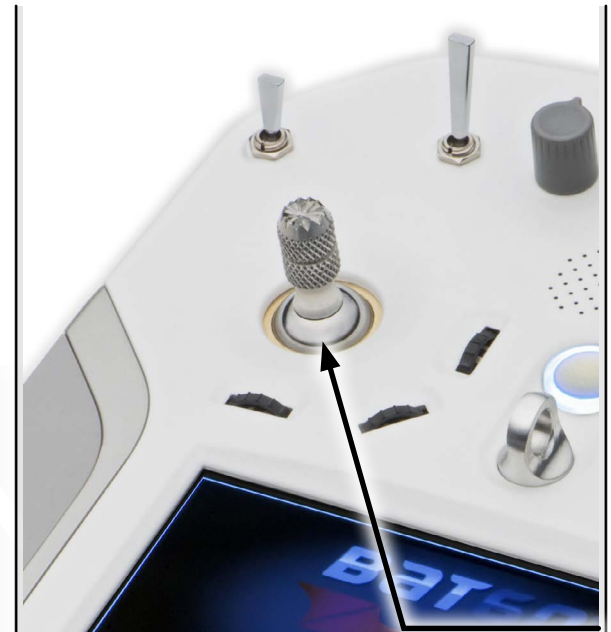
4. Care instructions

- ⚡ Please use a soft and damp cloth for cleaning the case and the display.
- ⚡ We recommend keeping the two sticks clean. Usually you don't need to oil the center ball of the stick! However we recommend using a very tiny amount (one drop maximum) of synthetic lubricant which does not resinify or polymerize. Please use a cloth and apply very little. Call us if you have any questions.
- ⚡ Whenever the radio is used in humid air please let it dry properly before switching it on again.
- ⚡ If your BAT radio got somehow wet inside or outside please switch it off and let it dry completely before switching it on again.
- ⚡ Keep your BAT transmitter clean, dry and avoid dusty environment.
- ⚡ Do not block the antennas with any kind of electro conductive material. This includes also parts of the body. The 2 antennas of the BAT 60 are located underneath the black front cover. The BAT 64 antennas are located left and right of the display above the Switch row. Check [„5. General overview“ \(page 11\)](#): there you see the exact location.

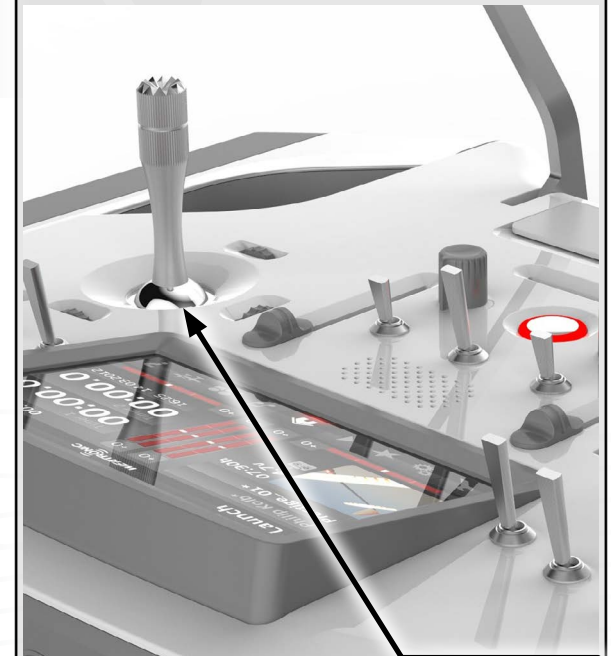


- ⚡ Many components of your radio could be influenced by magnetic waves.
- ⚡ Please keep away any strong magnets.

- ⚡ If you want to store your weatronic transmitter for a longer period, please charge it completely, check if it is dry and place it inside the aluminum case. Then keep it in a cool and dry place and avoid direct sunlight.



Center Ball (BAT60)



Center Ball (BAT64)

5. General overview

5.1 BAT 60 overview

Check the pictures of the BAT 60 on the right. All important mechanical features and the ports are marked

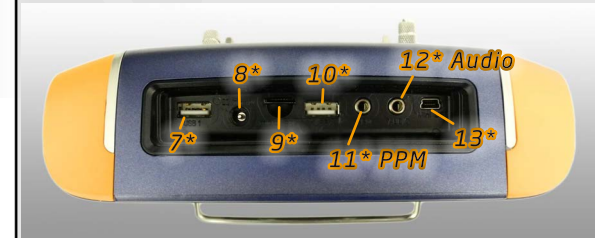
NOTICE

Never block or cover the 2 internal Patch-antennas. The Antennas are marked red in the pictures

- 1*** TOP Potentiometer, here you see the aluminum upgrade at the picture. Check our [web-shop](#).
 - 2*** Toggle Switches (TS), fully customizable, check the [web-shop](#) about all different available version and [„9.1 Adjustment for BAT 60“ \(page 21\)](#) for adjusting them.
 - 3*** Loudspeaker, check [„14.4. Output Settings“ \(page 81\)](#) for the volume adjustment
 - 4*** Rotary Encoder, 3 of them around each stick, normally used for trimming functions in flight. Information and adjustment at [„14.7. Rotary Encoder Setup“ \(page 34\)](#)
 - 5*** ON / OFF Button, added functionality: “save changes and go to HOME SCREEN”, more info in [„14.8. ON/OFF Button functions“ \(page 34\)](#)
 - 6*** Hanger-Ring
 - 7*** USB standard port 1, common use is for mass storage devices like USB-sticks only
 - 8*** DC in (10 - 19 Volt), This is the charge plug of your BAT 60. Please read [„11. Charging BAT transmitter \(10 - 19 Volt\)“ \(page 25\)](#)
-
- 9*** External Micro SD card, made for mass storage devices like Micro-SD cards, All data logging is recorded on the internal storage
 - 10*** USB standard port 2, common use is for mass storage devices like USB-sticks only
 - 11*** PPM signal (in/out), See [„21.1.12 Teacher Student“ \(page 67\)](#) for more information
 - 12*** Audio jack, 3,5mm headphone plug
 - 13*** Mini USB, Service port (only for weatronic service) Please note that this port is only used by weatronic technicians.
 - 14*** Rocker Switches (left and right)
 - 15*** SIDE Potentiometer (left and right)
 - 16*** Metal Handle



Top View



Rear View



Side View

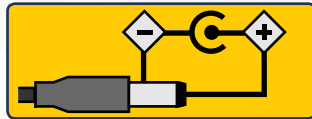
5.2 BAT 64 overview

Check the pictures of the BAT 60 on the right. All important mechanical features and the ports are marked

NOTICE

Never block or cover the 2 internal Patch-antennas. The Antennas are marked red in the pictures

- 1*** Toggle Switches (TS), fully customizable, check the [web-shop](#) about all different available version and [„9.2 Adjustment for BAT 64“ \(page 22\)](#) for adjusting them.
- 2*** Rotary Encoder, 4 of them around the sticks, normally used for trimming functions in flight. Information and adjustment at [„14.7. Rotary Encoder Setup“ \(page 34\)](#)
- 3*** Loudspeaker, check [„21.4. Output Settings“ \(page 81\)](#) for the volume adjustment
- 4*** Center Toggle Switches (TS), standard configuration and fixed.
- 5*** Sliders,
- 6*** TOP Potentiometer, here you see the standard version at the picture, you could upgrade to aluminum. Check our [web-shop](#).
- 7*** ON / OFF Button, added functionality: "save changes and go to HOME SCREEN", more info in [„14.8. ON/OFF Button functions“ \(page 34\)](#)
- 8*** DC in (10 - 19 Volt), This is the charge plug of your BAT 64. Please read [„11. Charging BAT transmitter \(10 - 19 Volt\)“ \(page 25\)](#)



- 9*** Mini USB, Service port (only for weatronic service) Please note that this port is only used by weatronic technicians.
- 10*** USB standard port 1, common use is for mass storage devices like USB-sticks only
- 11*** External Micro SD card made for mass storage devices like Micro-SD cards, (All data logging is recorded on the internal storage, and not here)
- 12*** USB standard port 2, common use is for mass storage devices like USB-sticks only
- 13*** PPM signal (in/out), See [„21.1.1.2 Teacher Student“ \(page 67\)](#) for more information
- 14*** Audio jack, 3,5mm headphone plug



Controls arrangement around sticks



Center controls arrangement and connectors bay

5.2.1 How to open and close the BAT 64 handles

The 2 handles of the BAT 64 can be folded for transportation inside the metal case. If deployed they can be locked in the vertical position. To deploy and lock the handles please follow this easy 2 steps

1. First of all you have to move the handle to the vertical position until the stop. If you can't move it fully vertical please push it down a little bit.
2. Now grab the handle and pull upwards until it locks in place. You will feel a snap and now it is locked.
3. To fold the handle again just perform the steps reversed.



Folded position, this way the BAT 64 fits perfectly inside the aluminum case.



Move it to vertical position



Pull it up to lock

6. Internal electronic

6.1 BAT 60 internal overview

There are 3 main electronic PCBs (printed circuit board)

- The Main Board is the biggest one and there are several small PCB soldered to it. Like the two antenna PCBs and the rotary encoder PCBs and the front switches. The Main Board takes care about the transmission and is the most important component.
- The Battery Board takes care about the 4 Li-Ion cells. It contains a charger and the capacity surveillance for each cell. Furthermore it is monitoring electric overloading, temperature and current. The battery management is using 3 cells for operating the system and it keeps the remaining one as a reserve. The safety cell is selected by the system randomly on each start up.
- The Linux / Display board (LINDIS) contains the Linux computer which provides the interface to the user! Anyhow it is not necessarily needed to operate a model with the BAT 60.

Also there are some more additional smaller PCBs

- Each stick includes 2 hall sensor boards. All cable connections from the hall sensors boards to the Main Board are the most significant cable connection inside the BAT 60.
- There are some small PCBs at each toggle switch and at the two side potentiometer in the bottom case.

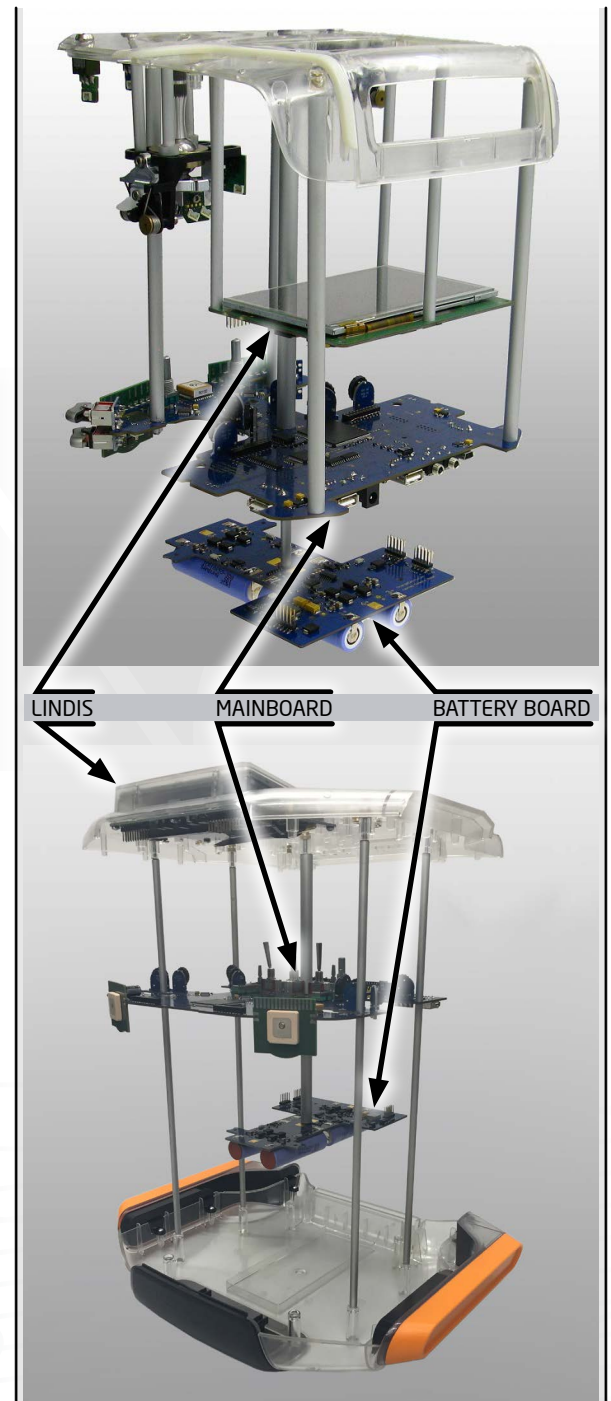
6.2 BAT 64 internal overview

There are also 3 main electronic PCBs (printed circuit board)

- The Main Board is the biggest one and there are several small PCB soldered to it. Like the two antenna PCBs and the rotary encoder PCBs and the front switches. The Main Board takes care about the transmission and is the most important component.
- The Battery Board takes care about the 4 Li-Ion cells. It contains a charger and the capacity surveillance for each cell. Furthermore it is monitoring electric overloading, temperature and current. The battery management is using 3 cells for operating the system and it keeps the remaining one as a reserve. The safety cell is selected by the system randomly on each start up.
- The Linux / Display board (LINDIS) contains the Linux computer which provides the interface to the user! Anyhow it is not necessarily needed to operate a model with the BAT 64.

Also there are some more additional smaller PCBs

- Each stick includes 2 hall sensor boards. All cable connections from the hall sensors boards to the Main Board are the most significant cable connection inside the BAT 64.
- There are some small PCBs at each toggle switch



7. How to open and close the BAT transmitter case

7.1 BAT 60

OPEN

- First of all switch off and please be aware that all internal electronics components are treated according to the mandatory formalities of how to use electromagnetic components. See the note below for a rough guideline.
- Remove the top foam inlay of the aluminum case and place the BAT 60 upside down.
- Now use the 2.5 mm Allen key and open all of the 6 (M3x20mm) screws at the bottom.
- Lift the bottom case part vertical up for about 1cm, now flip it over to the front (beware of the two cables).
- If you want you could detach the 2 cables to the bottom part (attached to the 2 side potentiometers), anyway we recommend to leave them attached and place the bottom part like shown at the picture on the right.
- There is also a small video how to open the case at our web page and our YouTube® channel.

NOTICE

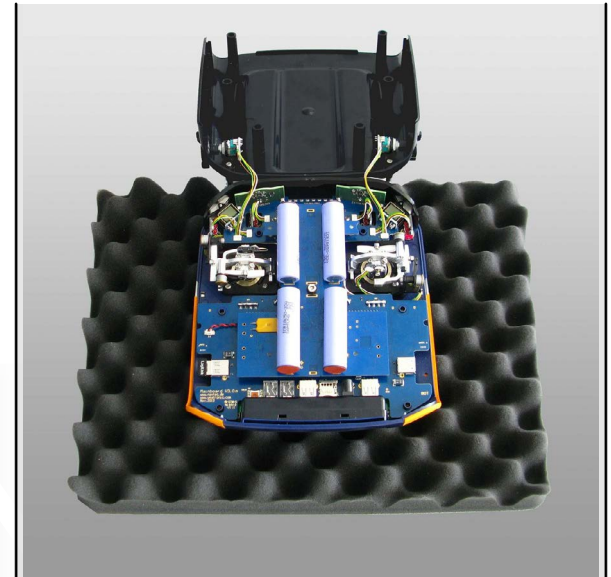


Follow these guidelines to reduce the risk of ESD damage. Please also refer to here. https://en.wikipedia.org/wiki/Electrostatic_discharge

1. Disconnect the power cord and any other cables connected to the radio.
2. Do not touch the edge connectors, exposed circuitry, or printed circuits on boards or cards.
3. Never place components on a metal surface. Metal surfaces can hold a static charge that will damage sensitive electronic parts.
4. Do not touch anyone working on integrated circuits. Inform others not to touch you when you are working as well. If you touch someone who is properly grounded, your "zap" or body discharge may not cause damage, but to be safe, keep your own body charge away from others.
5. Do not wear polyester clothing or bring plastic, vinyl or Styrofoam into your work environment. The electrostatic field that surrounds these nonconductors cannot be totally removed.

CLOSE

- After you are done with your adjustments it is time to close the case. Follow the steps precisely. There is also a short video available.
- We recommend that you use again the top inlay of the aluminum case and place the top part upside down.
- First of all please visually check all cables one more time and make sure that they are all locked in their corresponding connectors properly. Then press each of them one more time firmly. Just to make sure. Thanks.
- If you removed the cables to the two side potentiometers please reattach them now. Also double check them.
- Now slowly flip the bottom part above the top part and make sure that the 2 cables to the bottom potentiometers are placed in the right way.
- Now close the case. Please check that there are no cables jammed.
- Finally screw all 6 (M3x20mm) with the 2,5mm Allen Key. We recommend a maximum torque of 80Ncm (hand tight).
- Switch on and if necessary navigate to the calibration menu (general settings) and calibrate the controls [„1.5. Calibration of potentiometers, sliders and sticks“ \(page 35\)](#).



The cables have to be placed BETWEEN
the antenna board
and the toggle switch.

7.2 BAT 64

OPEN

- First of all switch off and please be aware that all internal electronics components are treated according to the mandatory formalities of how to use electro-magnetic components.
- Close and lock the socket cover.
- Remove the top foam inlay of the aluminum case and place the BAT 64 upside down. Adjust the two handles to the extended position and fix it (if possible) to a table like in the picture on the right.
- Remove the 4 rubber feet. They are only squeezed in, so simple use your fingers and pull them out.
- Now use the 2.5mm Allen key and open all of the 8 (M3x20mm) screws at the bottom.
- Lift the bottom case part vertical up. The side parts are attached to the bottom part. There is no cable connection between top and bottom case.
- Very soon there is also a small video how to open the case at our web-page.

NOTICE

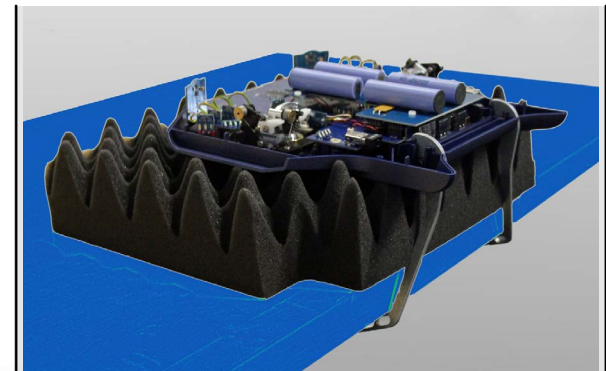


Follow these guidelines to reduce the risk of ESD damage. Please also refer to here. https://en.wikipedia.org/wiki/Electrostatic_discharge

1. Disconnect the power cord and any other cables connected to the radio.
2. Do not touch the edge connectors, exposed circuitry, or printed circuits on boards or cards.
3. Never place components on a metal surface. Metal surfaces can hold a static charge that will damage sensitive electronic parts.
4. Do not touch anyone working on integrated circuits. Inform others not to touch you when you are working as well. If you touch someone who is properly grounded, your "zap" or body discharge may not cause damage, but to be safe, keep your own body charge away from others.
5. Do not wear polyester clothing or bring plastic, vinyl or Styrofoam into your work environment. The electrostatic field that surrounds these nonconductors cannot be totally removed.

CLOSE

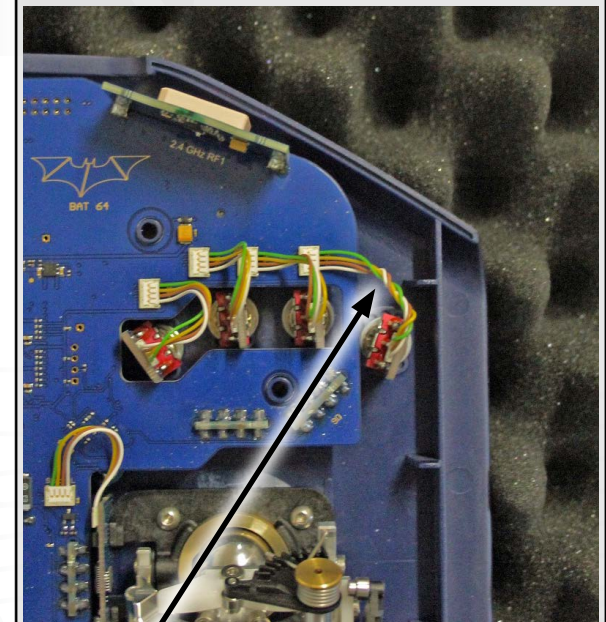
- After you are done with your adjustments it is time to close transmitter case again. Follow the steps precisely. Soon there is also a short video available.
- We recommend that you use again the top foam of the aluminum case and place it upside down.
- First of all please visually check all cables one more time and make sure that they are all locked in their corresponding connectors properly. Then press each of them one more time firmly. Just to make sure. Thanks.
- Now slowly flip the bottom part above the top part and make sure that the cables of the outer toggle switches are not squeezed. See the picture here.
- Now close the case completely. Please always check and take care that there are no cables jammed.
- Then screw all 8 (M3x20mm) with the 2,5mm Allen Key back in place. We recommend a maximum torque of 80Ncm (hand tight).
- Finally press the 4 rubber feet back in place. PLEASE NOTE: Before pressing them in remove the radio from the table in order to avoid any damages to top switches and gimbals.
- Switch on and if necessary navigate to the calibration menu (general settings) and calibrate the controls „1.5. Calibration of potentiometers, sliders and sticks“ (page 35).



BAT 64 without bottom case



Rubber Feet



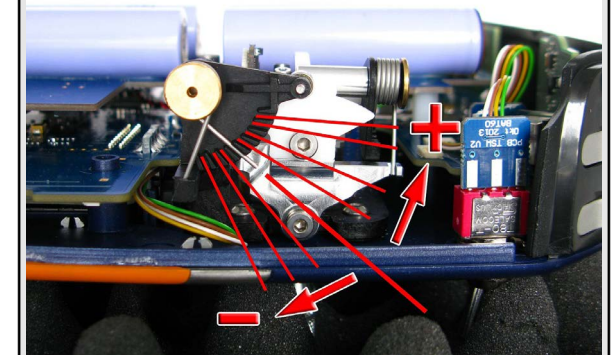
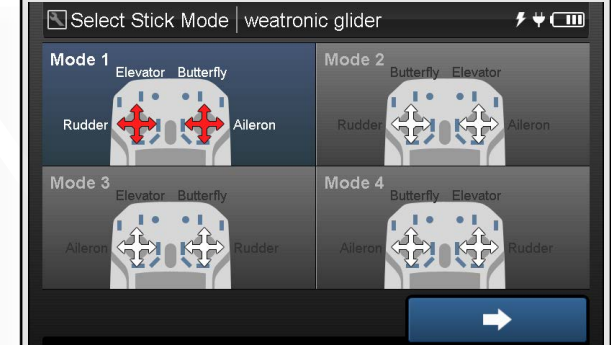
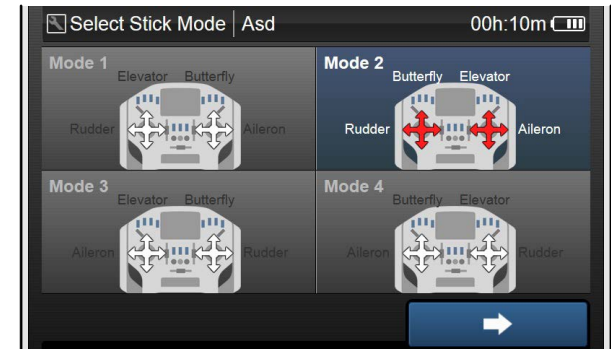
Take care. Do not squeeze this cable when closing the bottom case.

8. Mechanical stick adjustment

- ✦ The weatronic stick is a revolutionary design. It allows you to adopt each of the 4 axes to your personal needs.
- ✦ You can very easy change the mode by yourself.
- ✦ There are 4 different common Modes. Called Mode 1 to 4. Of course you can order your BAT transmitter with Mode 1/3 or Mode 2/4. As the Motor/Butterfly axis is mostly used with the so called ratchet behavior, it is only necessary to interchange the "feedback part" between Elevator and Motor/Butterfly when ever you want to change from Mode 1 or Mode 3 to Mode 2 or Mode 4.
- ✦ You can also adjust the "spring-force" and the "feedback characteristics". Check also the "[weatronic feedback parts](#)" description at our web page.
- ✦ Mainly you will open the radio case to customize the mechanical stick characteristics "[7. How to open and close the BAT transmitter case](#)" (page 15)

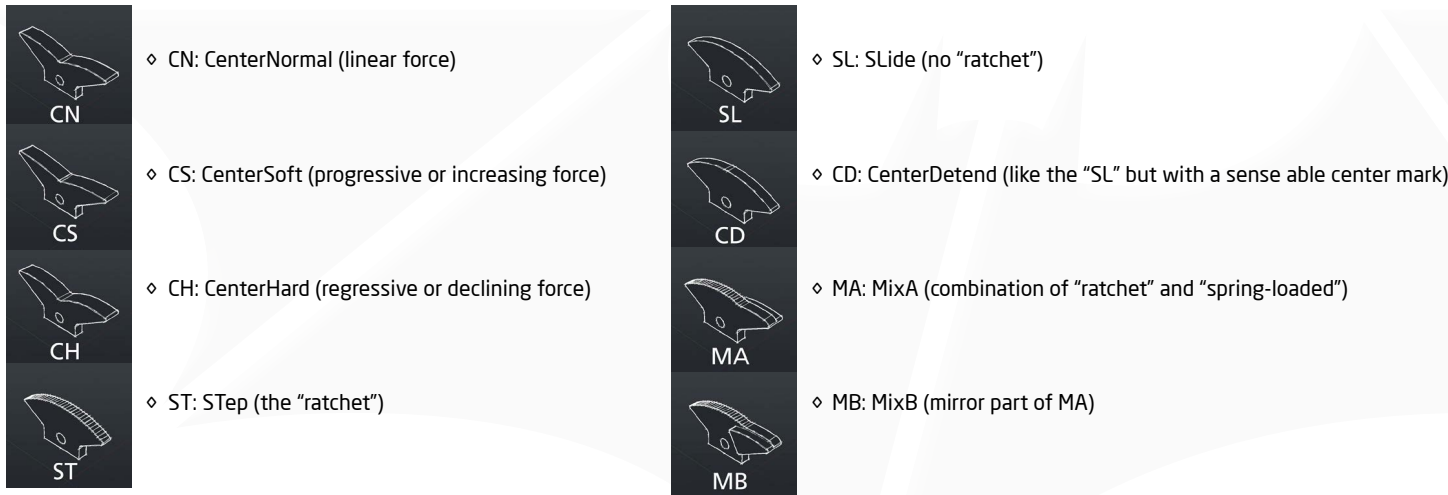
8.1. How to adjust the "spring force"

- ✦ Each of the gimbals axis can get a different "spring force"
- ✦ Very easily done by simply choose one of the 8 gaps on the so called "spring arm".
- ✦ Please check the picture on the right. The more you put the spring "upwards" the more tension will be applied. So you can very easily adjust the restoring force for each axis.
- ✦ Never modify the spring in any way. If you have any problems here, don't hesitate to contact us.



8.2. How to adjust the "stick characteristics" / the "mode"

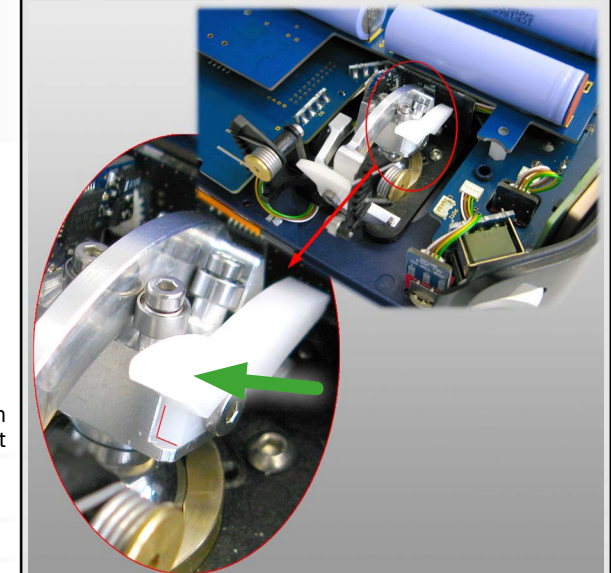
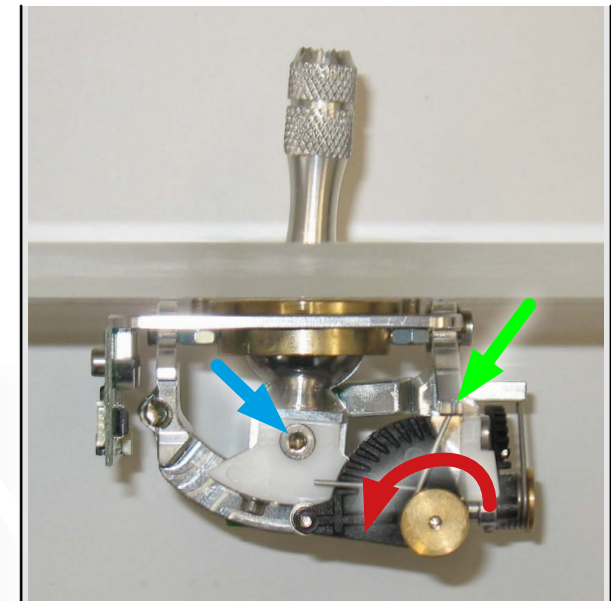
- The changeable feedback parts give you absolute unique possibilities.
- First of all you can change to each mode very easily by simply exchanging the ratchet behavior part (ST) with the other side.
- Secondly you can get 2 different feelings on one stick-axis. The MA (or MB) part let you get normal ratchet for the first 70% of the stick axis. And the remaining is spring-loaded.
- Last but not least you can set each of the 8 behaviors to each of the 4 axis to your personal taste.
- Changing is really easy:
 1. First of all release the tension of the spring and release it (see the green arrow at the top picture).
 2. Then flip the "spring arm" away for better access to the feedback part (see the red arrow).
 3. Use the 2mm Allen Key and unscrew the white "feedback part" (see the blue arrow).
 4. Now choose your preferred new "feedback part", there are 7 different ones (see the mark on the outer side of every part):



5. Screw the new "feedback part" back in place, the mark has to point outside. Tight the screw slightly hand-tight (maximum of 40Ncm). Make sure the plastic part has a completely seamless fitting to the aluminum part.
6. Finally flip back the "spring arm" and attach the spring back in place.

NOTICE

The upper "feedback part" surface (lower picture, darkgreen arrow) where the "spring arm" ball bearing is touching is extremely critical. Even the smallest scratch or dent is clearly recognizable as a "scratchy" feeling on the stick. So please take care here. The surface should be smooth and clean like a mirror. Replacement parts are available.



The lower edge and the backside of the plastic part has zero tolerance to the aluminum part, this ensures a perfect alignment.

If there is an excess on the back edge of plastic part please remove it carefully, a slight chamfer is recommended.

8.3. Interchanging of sticks

8.3.1 Replacement of stick length

- This is very easy. The sticks are like a screw. Just unscrew them and replace them with a different length.
- There are several length available.
- Please do not use any tools here. Again hand tight is enough
- Check the [weatronic Online shop](#) for latest informations about all available variations.

8.3.2 Stick options

There are several options for upgrading the stick itself with switches, buttons and or encoders. Contact our service for latest information about available versions. At the moment there are 2 different versions:

- 3 position Toggle Switch
- Rotary encoder with push button function

Mounting the stick is very user-friendly. Follow this steps:

1. Switch the transmitter off and open the case [„7. How to open and close the BAT transmitter case“ \(page 15\)](#)
2. Unscrew the old stick. (If you already are using a stick with additional features please follow step 6 to 3 in reverse sequence.)
3. Take the new stick and guide the connector with the cable carefully through the center-ball duct to the exit. Please see the picture on the right. The connector will fit easy through the duct, nevertheless please be gentle and don` t push or pull roughly.
4. Then slide the new stick in the center -ball drill hole BUT do NOT screw it yet.
5. Twist the cable gentle 5 times counterclockwise. Only now screw the stick hand tight. The cable should untwist.
6. Finally plug the connector of the stick to the free slot at the internal hall sensor PCB board. Double check that the connector is fully engaged.
7. Close the transmitter case [„7. How to open and close the BAT transmitter case“ \(page 15\)](#)
8. If you mounted the stick with the 3-pos. switch you should now align the switch and fix it with the small nut.

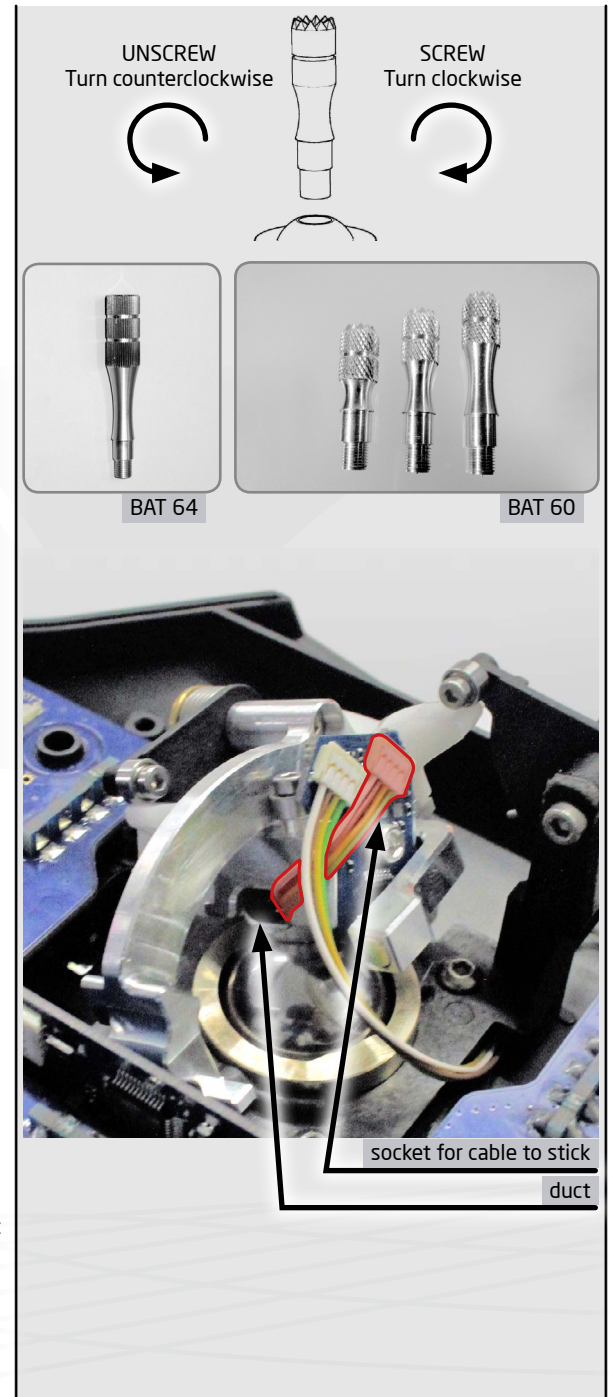
After hardware mounting you have to activate the new stick controls at the general settings. Also refer to [„21.3.6. Control Configuration“ \(page 80\)](#)

1. Navigate to “General Settings” - “Stick Control Configuration”
2. Choose your option from the drop-down menu.
3. Leave the menu and reboot your radio.

We recommend to order your BAT radio already with pre-installed stick switches or encoder. As the installation is relative complex we strongly recommend that you send your radio to our technical support if you want to upgrade your sticks later.

NOTICE

weatronic cannot give any warranty due to any damage related to wrong installation.

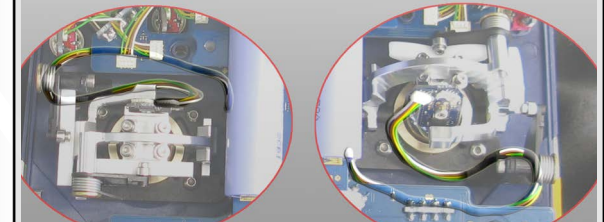
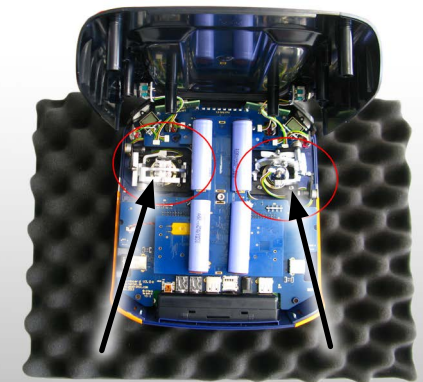


8.4. Laying of internal stick cables

- The cables from the mainboard to the stick PCBs (PCB = printed circuit board) are very important!
- Whenever you open the transmitter and especially before closing the radio, please always check a proper locking of the cables connectors to the sockets and also make sure that the cables are placed in the right way!
- See the picture on the right about the perfect alignment of the "stick-mechanic" cable connection.
- Whenever you encounter any issues or any visual damage to one of the cables or the stick itself do NOT operate your model. Never modify the stick in any way! Contact our service for repairs.
- See here a picture of the two stick PCBs:



The bigger one is the external and fixed "hall sensor board" and the small one is the internal one. The small PCB board is also providing an additional connector, which will be used if there are stick switches or similar controls added [„8.3.2 Stick options“ \(page 19\)](#)



The picture only shows the BAT 60 but please note that the cable laying of the BAT 64 is similar.

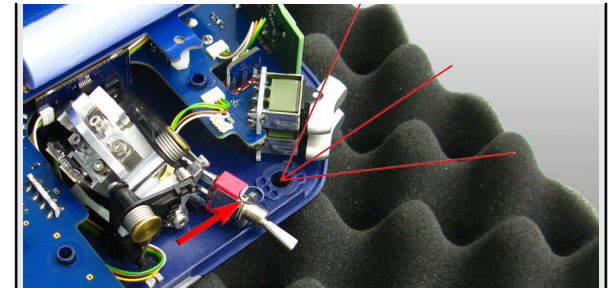
9. Toggle switch adjustment BAT radio

9.1 Adjustment for BAT 60

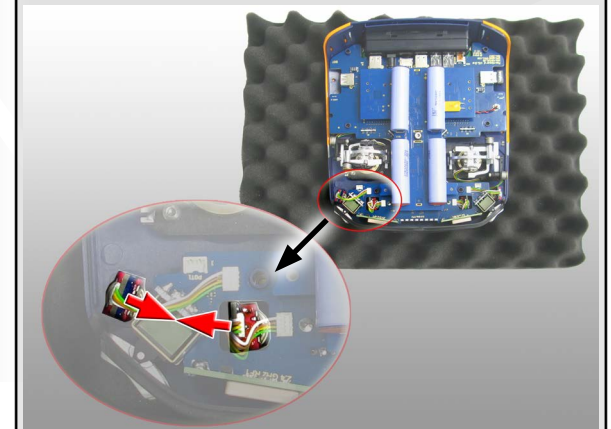
- ▶ You can customize the 4 top toggle switches (TS1 to TS4). See also the top view picture at [„5.1 BAT 60 overview“ \(page 11\)](#).
- ▶ There are several different kind of switches available. Please check our web shop for detail information.



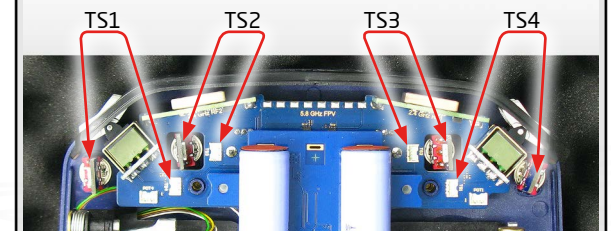
- ▶ You can apply different angular positions to each switch. Just choose one of the 3 positions on the case (see the top right picture - the red lines are marking the 3 different angular positions).
- ▶ Align the PCB boards in the correct direction. Check the right picture in the middle.
- ▶ Use a 9mm wrench to mount the dress nut. Be careful with case surface. The paint could be scratched. We recommend to protect the surface locally with tape.
- ▶ Please also check the weatronic web-page or the weatronic Online shop or also the weatronic YouTube® channel for a [short video](#).



The plastic case or the pin (marked with the red arrow) which prevents the switch to turn can be easily damaged.



The backside (see the lettering, which is on the backside) of the two blue switch mini boards have to point to each other!
The picture shows only one side. The other side must be arranged identical.



Also make sure that the cables are not twisted and the connectors are placed right!
The sockets on the mainboard are tagged with TS1 to TS4
The length of the cable is 50mm.

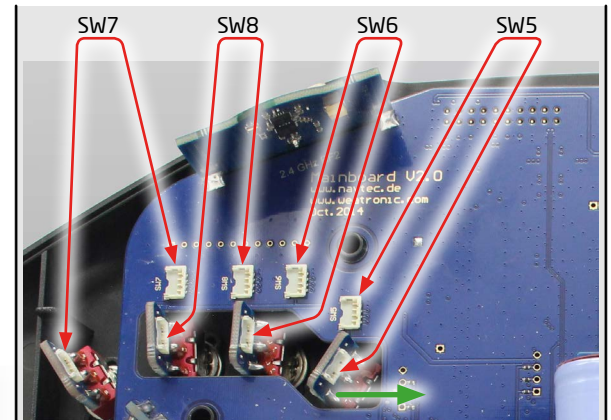
9.2 Adjustment for BAT 64

- You can customize the 8 top toggle switches (SW1 to SW8). See also the overview picture at [„5.2 BAT 64 overview“ \(page 12\)](#).
- There are several different kind of switches available. Please check our web shop for detail information.
- You can apply different angular positions to each switch. Just choose one of the 3 positions on the case. Please notice and compare the top right picture at the previous page.
- Align the blue PCB boards in the correct direction. The socket side must point to the inside. Check the little green arrows at the two pictures.
- Use a 9mm wrench to mount the dress nut. Be careful with case surface. The paint could be scratched, so we recommend to protect the surface locally with tape.
- The cable length is 50mm.
- Please always double-check that the plugs are locked 100%!
- Please also check the weatronic web-page, the weatronic Online shop or also the weatronic YouTube® channel for a short instruction video.

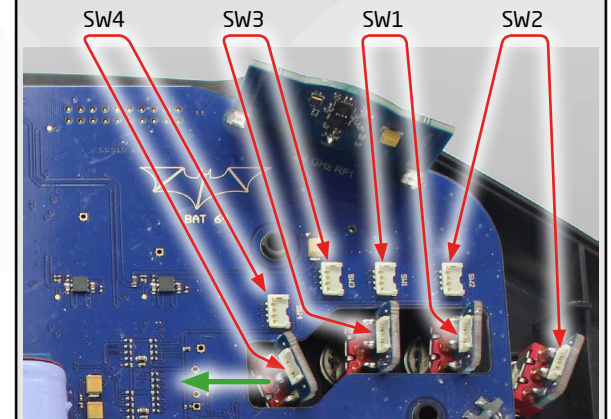
NOTICE

If you changed the SW4 and you get a white screen with some text like “Unable to load...” after switching on your BAT 64. Most probably the internal SD-Card got removed from its slot.

Please check [„23.1 Unable to load page...“ \(page 85\)](#) how to solve this problem.



BAT 64 left side (bottom view)



BAT 64 right side (bottom view)

10. Hardware extras

The BAT transmitters can be upgraded with some really nice features. Please contact our support and check our Online shop for more information about installations and availability. [\(LINK\)](#)

- 7 different kind of toggle switch behaviors. [Always check our web shop for latest Versions.](#)
- The 2 top potentiometer are also available in aluminum.
- There is the option to install a vibration motor, which can indicate warnings or simple information. Please note that the vibration comes not as a standard with your BAT radio.
- The stick mechanics can be upgraded. The main support plate will be high precision aluminum.
- In addition there is a feedback part tuning set available. [„8.2. How to adjust the “stick characteristics” / the “mode”“ \(page 18\)](#)
- There is also an option to install a Blue-tooth chip to the main-board. See [„10.1 How to install the blue-tooth telemetry chip“ \(page 24\)](#) and [„21.1.4.2. Blue-tooth Configuration“ \(page 52\)](#)
- The Wi-Fi dongle is a standard with each radio and connects your BAT radio to standard Wi-Fi networks. If your BAT radio is connected to the same network as your PC you will be able to access to the radio via your browser and program simultaneously from both devices. We recommend that you use one of the devices as the “main” programming input and the “second” one as a control display. Because it will be confusing if you change values for one “item” from 2 different sources. Please consider a more detailed instruction at [„21.3.7. WiFi settings“ \(page 80\).](#)
- The Battery upgrade to 6 cells is available. See [„21.3.1. Battery Manager“ \(page 76\)](#)

The screenshots show the WEATRONIC online shop interface. Each page features a search bar at the top, a navigation menu on the left, and a product detail section. The products shown are:

- Switch for BAT-Transmitter:** Item no. VEA38330, price 6.99 €. A dropdown menu shows 7 variants: (1) hand/short on-off, (2) hand/short on-off safety, (3) hand/short on-off on, (4) lang/long on-off, (5) lang/long on-off on, (6) lang/long on-off on, (7) lang/long on-off on.
- Aluminum knobs for BAT transmitter:** Item no. VEA38332, price 6.99 €. Availability: 3-7 days.
- Vibrationmodule for BAT-Transmitters:** Item no. VEA38320, price 29.99 €. Availability: 3-7 days.
- Tuningkit Feedback Parts:** Item no. VEA38327, price 9.99 €. Availability: 3-7 days.

10.1 How to install the blue-tooth telemetry chip

Since October 2015 there is only a new hardware version of the Blue-tooth module available (V2). The blue-tooth range is drastically improved and also the mounting inside the radio changed regarding to the first initial version and is now slightly different for BAT 60 and BAT 64 .

Please consider that the new Version (V2) needs to have the latest BAT radio software 6.08!

The initial blue-tooth chip (V1) will still work, and if you also want to improve the range please contact our service directly.

The blue-tooth chip let you use additional external devices to display telemetry data. At the moment this are mostly tablets and you can use it for the applications which are needed for the GPS - Triangle competition ([LINK](#)). There are more application under development.

Please consider that you can't use audio applications with this internal blue-tooth chip.

Follow this steps to upgrade your BAT 64 with the blue-tooth chip V2.

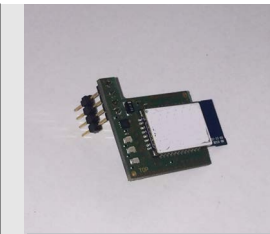
1. Carefully unpack the blue-tooth chip (V2). Take care about the 4 connector pins (they are way longer than V1)
2. Open your radio „7. How to open and close the BAT transmitter case“ (page 15) and place it in front of you.
3. Prepare the blue-tooth chip and remove the coversheet of the double-sided tape at the bottom side of the chip
4. Clean the area where the chip will be placed at the charge controller board. Use a soft and dry tissue if needed. (Yellow marked area)
5. Carefully plug the blue-tooth chip to the corresponding plug on the main-board. (RED ARROW)
6. Gently press the chip down for a little while. The double-sided tape will now stick to the charge controller.
7. Close the radio „7. How to open and close the BAT transmitter case“ (page 15)

Follow this steps to mount the chip at the BAT 60:

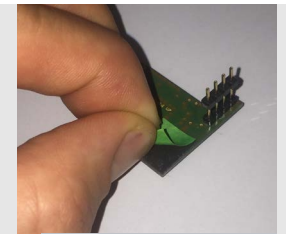
1. Carefully unpack the blue-tooth chip (V2). Take care about the 4 connector pins (they are way longer than V1 and they are Z bended)
2. Open your radio „7. How to open and close the BAT transmitter case“ (page 15) and place it in front of you.
3. Carefully plug the blue-tooth chip to the corresponding plug on the main-board. (RED ARROW)
4. Gently press the chip down until it is locked at the port and it is touching the charge controller board. Now you should use a temperature resistant tape to secure the chip.
5. Close the radio „7. How to open and close the BAT transmitter case“ (page 15)

NOTICE

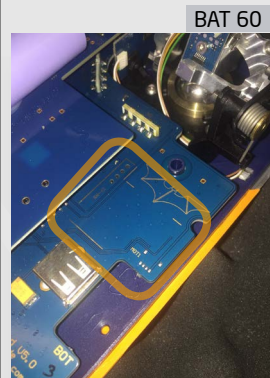
Some early main-board versions (only applies for BAT 60 - before main-board version V5) are not equipped with a plug for the blue-tooth chip. Please contact our support if you have this kind of board.



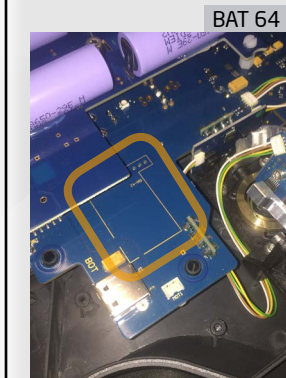
Blue-tooth telemetry chip



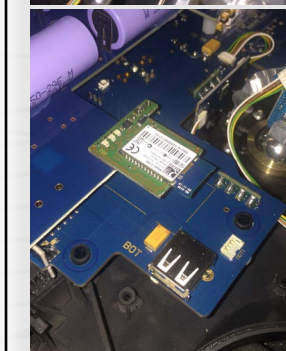
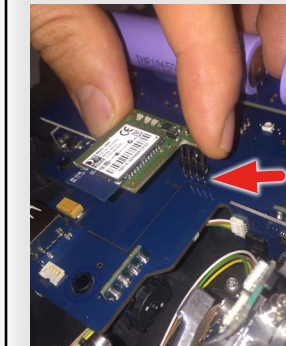
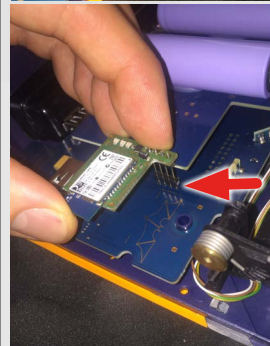
Remove the coversheet



BAT 60



BAT 64



11. Charging BAT transmitter (10 - 19 Volt)

- ⚡ The BAT radio is equipped with 4 (6 if upgraded) Li-Ion cells which are maintained and charged by an internal charge controller.
- ⚡ This controller checks temperature, voltage, current, and calculates the capacity of each cell. Also it takes care about the entire charging process.
- ⚡ Whenever there is a voltage between 10 and 19 Volts applied to the power jack the controller starts to charge the cells.
- ⚡ So in order to charge your radio easily attach the switching power supply which is provided with your radio.
- ⚡ You can get some car adapter at our shop too.
- ⚡ Also you could use any other voltage source or external battery. So for example a 3s Li-Po battery could do the job. Just be aware that the battery pack will get discharged down to 10 Volts (default settings).
- ⚡ If you use another voltage source than provided with your radio, weatronic will not assume any liability for damage due to a wrong power supply or source.

Under "General Settings"  you find the battery management menu and there you can check the status of all cells.

NOTICE

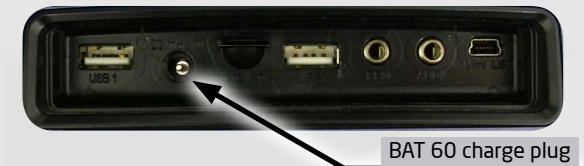
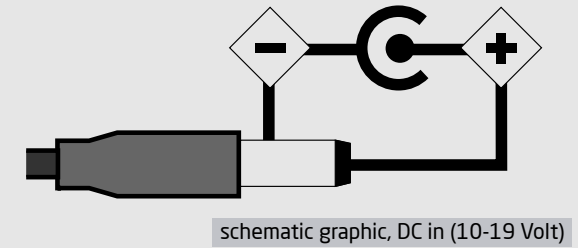
Charging during operation/flight is possible.

NOTICE

If you have the 6 cell Battery Board upgrade please refer to „[21.3.1. Battery Manager](#)“ (page 76) about detailed information.

NOTICE





Never modify the charge controller in any way! The unit is tested and will not work if you for example add 2 cells by your own. A special firmware upgrade is needed. Please contact our service if you encounter any issues regarding the charge controller.



12. LED status information

The LED ring around on/off button shows you some basic system status. If the radio is switched off and you connect the power supply, the battery board is starting to check all cells and will then start the charging process. SO it will take some seconds until the LED ring will give you some status information.





12.1. Transmitter is switched off and charging

	—	green:	fully charged
	—	orange:	more than 80% capacity
	—	red:	less than 80% capacity
	—	red flashing:	recovering of low battery status, after around 15 minutes, it should be solid red. If not please contact our service.

12.2. Transmitter is switched on

The LED ring around the on/off button give some status information as soon as the radio is switched on. The pulsing light (transmitter status) and then some blink codes (receiver or startup warnings).

◀ The **slow pulsing blink** shows the state of the BAT radio batteries:

	—	blue:	more than 20% capacity remaining
	—	orange:	less than 20% capacity remaining
	—	red:	less than 10% capacity remaining
	—	red rapid flashing:	Running on spare battery / the spare battery not fully charged / general issue Do not operate any models anymore! Turn your radio off and charge it!

◀ The short red blink code in between shows the receiver status (Please consider [„21.1.2. Receiver Configuration \(BINDING\)“ \(page 44\)](#)). The LED blink-codes are always combined with a acoustic beeping of the loudspeaker. We strongly recommend that you always check the volume before you operate your model. Please adjust the loudness according to your surrounding so you can always hear the warning beeps perfectly.

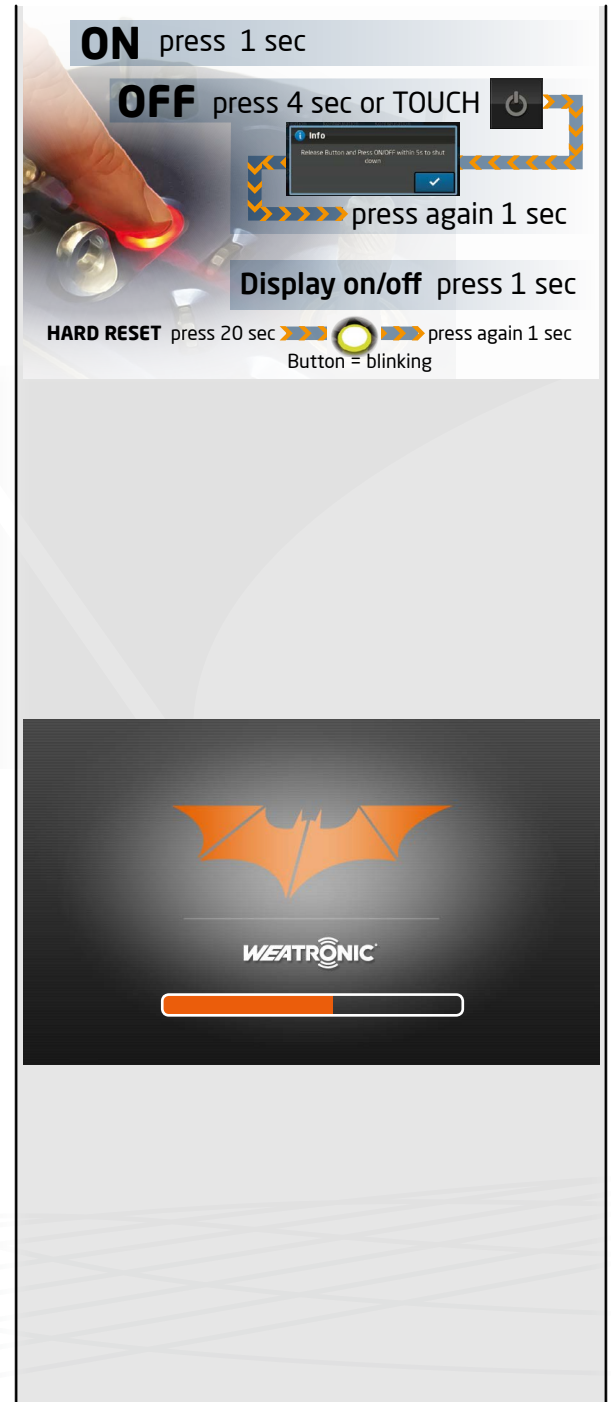
- no blinking/beep: no warning
- 1x red: back-channel threshold warning
- 2x red: up-link threshold warning
- **3x red: low receiver battery threshold warning**

◀ The long purple signal (also the loudspeaker will give you a longer beep) indicates that there are some startup warnings activated. Check [„21.1.17 Startup Warnings“ \(page 71\)](#)



13. How to switch on/off

Check the graphic on the right for a short ON-OFF brief instruction.



13.1. ON

- ✦ Pressing the on/off button for about 1 second will activate the BAT radio and will start the boot process of the Linux PC.
- ✦ The booting of the Linux will take some seconds.
- ✦ The LED around the ON-OFF button is already giving you all the status information like normally
- ✦ Nevertheless you could fly and control the last used model-memory within a few second with all settings, Flight modes, etc.
- ✦ Linux boot is finished when you see the home screen.
- ✦ Now you can do changes on the settings, change model-memory, etc.

13.2. OFF

To shutdown the radio you have to perform 2 steps!

1. Tab the "shutdown" symbol at the lower navigation bar or press the ON-OFF button continuous for more then 3 seconds. There will be an info pop up at the screen and the on/off button will get red. If you pressed the ON-OFF button for 3 seconds release the button now.



2. Now just press the on/off button once for about 0.5 seconds and you will see the confirmation pop up about shut down process of the radio.



NOTICE

For safety reason, if there is still a connection to a receiver, you have to confirm (just tab ignore) before you can switch off. This should also help not to forget to switch off your model.

13.3. RESET

Whenever there is a problem to switch the radio off like it is explained like in chapter 13.2, you can do a hard reset. Please do this only in case of real need. Again you have to do 2 steps:

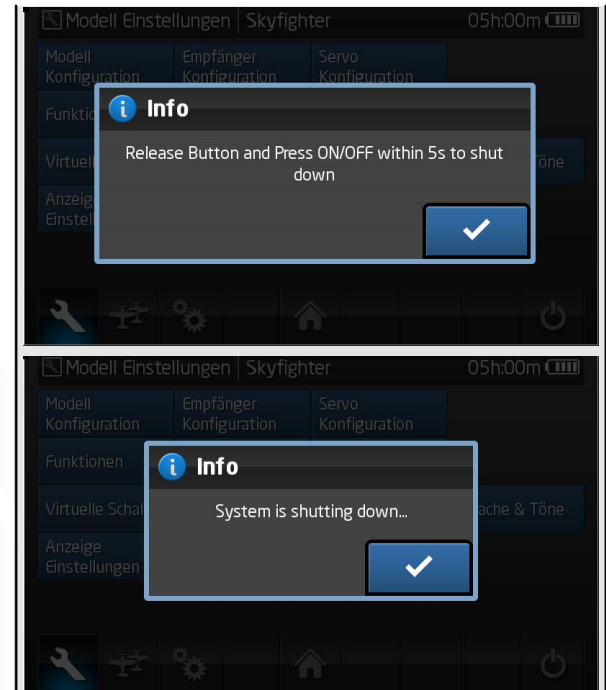
1. Press the ON/OFF button continuous for at about 20 seconds, until the LED around the ON-OFF button will start to flash rapidly orange.
2. Now release the button and the LED will become red. Now you have 3 seconds to press the button again (press for about 1 second) and the BAT radio will immediately turn off.

NOTICE

Consider that there is maybe some normal status information indicated by the LED. This blinking could maybe interfering with the rapid orange or red flashing.

NOTICE

If a hard reset is performed it is possible that some of the latest setup changes are not saved and maybe discarded.



14. Interface

14.1 Home-screen (Telemetry Screens)

The home-screen is the first screen which you will see after switching on your BAT radio. From here you will reach the complete menu of your radio. Also from the home-screen you can reach the so called telemetry screens. Please read [„21.1.13. Screen Adjustment \(home and telemetry screens\)“ \(page 68\)](#) for proper information about adjusting the homescreen and creating telemetry screens.

- The home-screen is the main screen which you are normally using during flight or operation of your model. It is arranged in 3 areas. From top to bottom.
 - The TOP row is explained in [„14.3. TOP INFO ROW“ \(page 30\)](#)
 - The MIDDLE layout of the home-screen can be adjusted at the screen adjustment menu. As default you will see the model picture on the left and up to 3 telemetry data on the right.
 - Around the MIDDLE layout you see the indicators for the rotary encoders, please check the pictures on the right. There you see a screenshot of the BAT 64 and the BAT 60 home screen and at each of them the left and right sticks with all rotary encoders around them. This shows which indicator is representing which rotary encoder.
 - The BOTTOM row is the main navigation row and is explained in [„14.4. NAVIGATION ROW“ \(page 31\)](#)
 - The telemetry screens can be reached either by swiping left or right at the homescreen or by using the so called [„Telemetry Screen Switch“](#) (see [„21.3.6. Control Configuration“ \(page 80\)](#)).
 - The layout of each telemetry screens can be adjusted at the screen adjustment menu [„21.1.13. Screen Adjustment \(home and telemetry screens\)“ \(page 68\)](#)
 - [Each telemetry field is also storing the minimum and maximum values. If you tab them you will be able to reset them.](#)

NOTICE

Timers can only be reset with the assigned reset control [„21.1.10. Timers“ \(page 65\)](#)



Each of the 8 rotary encoders at the BAT 64 has a visual indication bar and a value from -100 to +100. The picture shows the assignment by the different colors.

Please consider if the value is underlined the rotary encoder is flight mode dependent. [„14.7. Rotary Encoder Setup“](#)

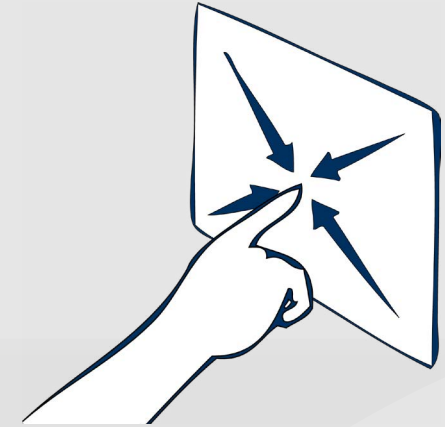


Each of the 6 rotary encoders at the BAT 60 has a visual indication bar and a value from -100 to +100. The picture shows the assignment by the different colors.

Please consider if the value is underlined the rotary encoder is flight mode dependent. [„14.7. Rotary Encoder Setup“](#)

14.2. The display

- The display of BAT radio is a capacitive touch screen. This means it recognizes the presence of your finger.
- Pressing hard on the screen will not improve functionality but reduce lifetime. Furthermore it will not recognize any metal, wood, plastics, etc.
- If you don't want to use finger for touch please buy a special pen for capacitive touch screens.
- Also be aware that the display is affected by temperature. If it is very cold it is normal that the refresh rate of the display is slower than normal.



14.3. TOP INFO ROW

The information row on top which is shown in almost all menu screens informs you about

- 1*** The current flight mode
- 2*** The battery symbol on the top right corner gives rough evidence about the battery status of your radio.
For detailed information go to the battery manager [„21.3.1. Battery Manager“ \(page 76\)](#)
- 3*** If WiFi is activated you will see a connection signal strength symbol.

If the homescreen is locked you will see the lock symbol. A short pressing of the ON/OFF button will unlock the screen again. The swipe option to reach the telemetry screens will never be locked.







Go to the [„21.1.13. Screen Adjustment \(home and telemetry screens\)“ \(page 68\)](#) if you want to configure this option.

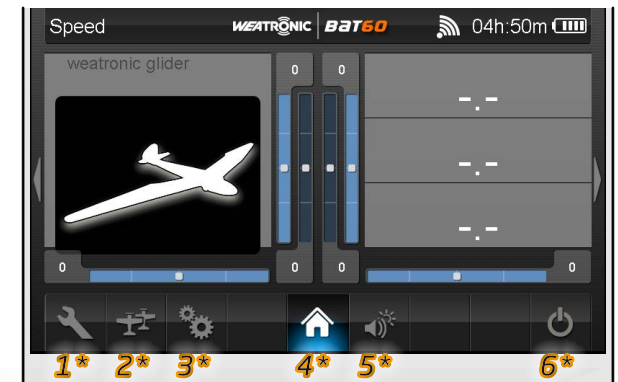


TOP INFO ROW

14.4. NAVIGATION ROW

The navigation row on the bottom is used to enter the setup menus. See here the description of the symbols:

-  **1*** „21.1. Model Settings“ (page 42)
-  **2*** „21.2. Model Management“ (page 74)
-  **3*** „21.3. General Settings“ (page 75)
-  **4*** “Home” takes you back to the home screen. You can press the ON-OFF button to go to the “Home-Screen” as well.
-  **5*** „21.4. Output Settings“ (page 81)
-  **6*** „13.2. OFF“ (page 28)



14.5. Common interface symbols

There are also some common symbols used for navigation through the interface. Please check the pictures on the right. There you see some example for the symbols, but of course you will find this symbols in almost every menu.



1* Toggle Button, use this to toggle between 2 different kind of views for this menu.



2* Add something new to a list, if a list is empty please use the button to add the first option.



3* Delete something from a list. Please use the "cross" button at the line which you want to delete.



4* Rearrange a list, when you tab you will see small "up" and "down" arrow buttons at each line of the list. Use them to rearrange to your needs.



5* "Additional info" (short link to servo monitor, screenshot (will be saved at the internal SD) and the page specific help)



6* Leave the page



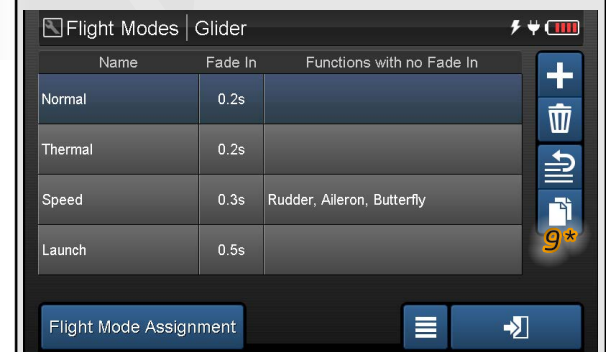
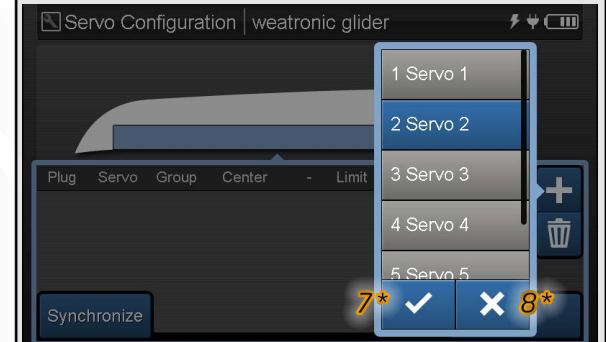
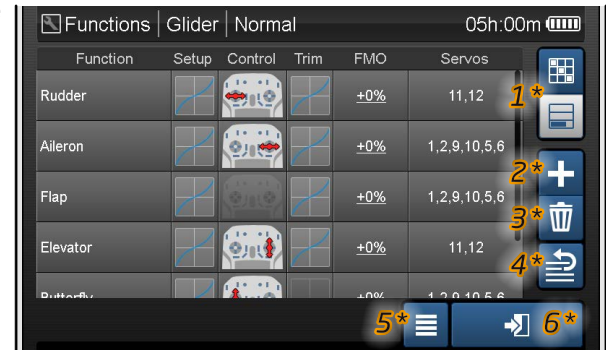
7* Save settings and/or changes



8* Abort settings and/or changes



9* Copy option (like for example: copy flight modes or copy a model memory)



14.6. Common "pop-up" menus

There are 3 different kind of common pop-ups. Please be aware that the pop-up is always opened in the foreground and the background menu is dimmed a little and also not access able via touch input anymore. Close the pop-up to access the menu again.

14.6.1 "value adjustment pop-up"

Whenever you tab in a NUMBER value the "value adjustment pop-up" (upper picture on the right) will show up:

- 1* Slider for rough adjustment, just tab it and the slider will jump to the position.
- 2* + Button, tab and increase by 1 step (depending on the resolution which you can adjust at „21.1.1. Model Configuration“ (page 43))
- 3* - Button, tab and decrease by 1 step (depending on the resolution which you can adjust at „21.1.1. Model Configuration“ (page 43))
- 4* You can also use each of the rotary encoders to change the value. Or if you go to the General settings > Control Configuration you can decide for only one of them. See „21.3.6. Control Configuration“ (page 80)

Please note that if you assigned the rotary encoder as a trim or as a function input, you will change these values as well. So you better use one which is not assigned!

- 5* Tab here and you will change the complete pop-up to a numeric view, now you can type the exact value.
- 6* UNDO
- 7* Save the value and close the pop-up

14.6.2 "keyboard pop-up"

NOTICE

If you are using the Wi-Fi feature the keyboard pop-up will appear different. The browser will allow you to use the normal keyboard of your device.

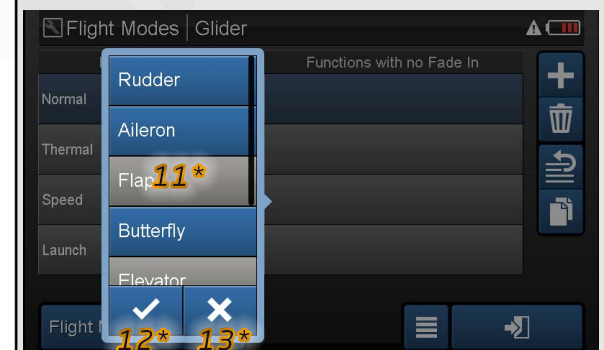
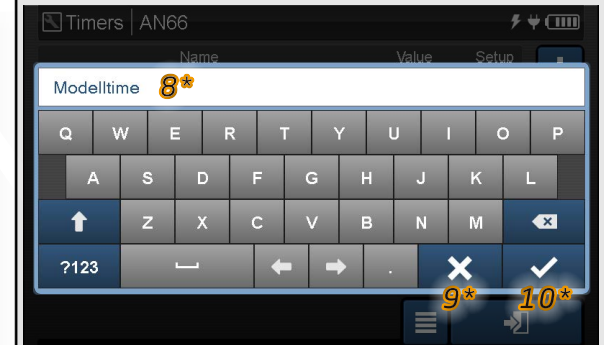
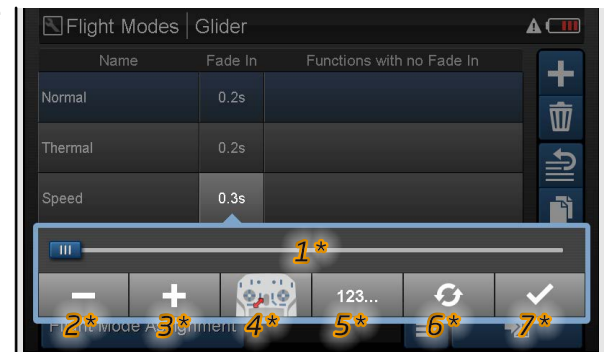
- 8* The "keyboard pop-up" will appear whenever you tab on a editable name.
- 9* Tab the "CROSS" button to abort your changes and close the keyboard.
- 10* Tab the "CHECK" button to save your changes and close the keyboard.

14.6.3 "(multi) selection pop-up"

NOTICE

Sometimes multiple selection is possible

- 11* The scrollable "selection pop-up" will appear whenever you tab an option which provides only predefined selections.
- 12* Tab the "CROSS" button to abort your changes and close the pop-up.
- 13* Tab the "CHECK" button to save your changes and close the pop-up.



14.7. Rotary Encoder Setup

Whenever you choose one of the rotary encoder as a control you will see a "Options" button on the lower left corner.

Tab to enter the Rotary Encoder Setup setup for this specific encoder.

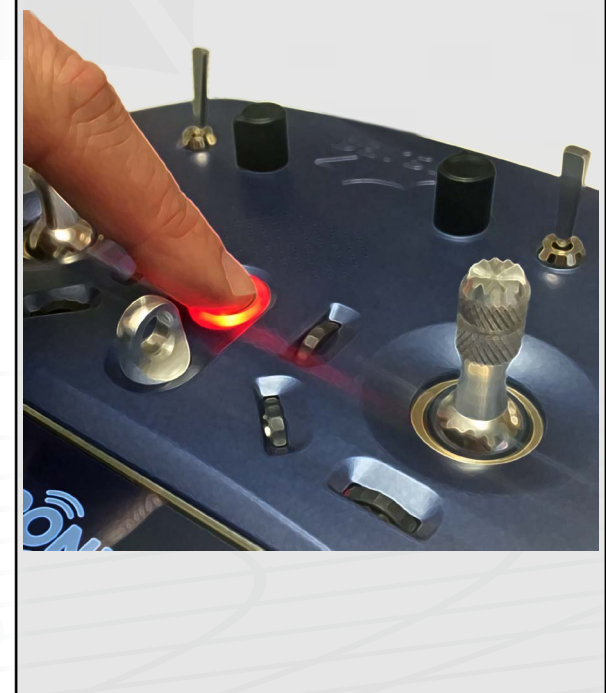
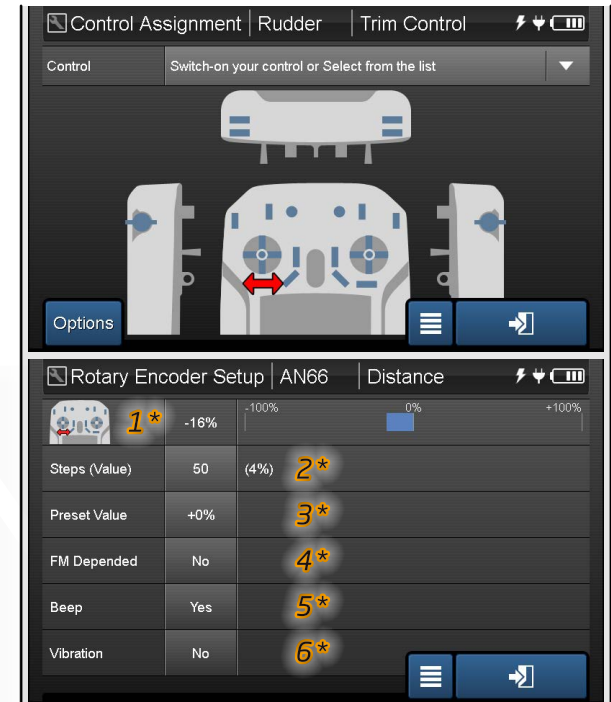
- 1*** On the top you see the control and the live position.
- 2*** Steps (Value), adjust the steps which should be executed with one "Rotary turn click" - for example 10 steps equals 20%
- 3*** Preset Value, this value defines the value which you want to set if you press the rotary encoder.
- 4*** FM Dependent, this option let you adjust "Flight Mode" based trims - If you enable this feature you will see that the value number at the home-screen is underlined if the rotary encoder is flight mode dependent.
- 5*** Beep, enable the beep if you turn the rotary encoder
- 6*** Vibration, enable a vibration signal if you press the rotary encoder or if you reach the "Preset Value" or +/- 100% (only if a vibration motor installed)

14.8. ON/OFF Button functions

Since V606 the ON/OFF button got a new very useful feature. Whenever you press the button inside the menu structure you will leave the menu and you will come back to the homescreen. If you did some changes on the menu all changes will be saved before you enter the homescreen.

When you press the button at the homescreen you can disable the touch input function (lock symbol at the TOP INFO ROW) and also you can switch off the LCD display, you can adjust an automatic "LCD - OFF" called AUTO DIM and an automatic "Touchscreen Lock" called SCREEN LOCK at the screen adjustment menu [„21.1.13. Screen Adjustment \(home and telemetry screens\)" \(page 68\)](#)

By pressing the button again you can unlock the touchscreen and/or switch it on again.



15. Calibration of potentiometers, sliders and sticks

You can recalibrate some of the controls of your radio.

☞ At the BAT 60 you can calibrate:

- both axis of both gimbals
- the 2 top potentiometers
- left and right side potentiometer

☞ At the BAT 64 you can calibrate

- both axis of both gimbals
- the 2 top potentiometers
- the 3 sliders

NOTICE

Switches and rotary encoders can not be calibrated and also they never have to be.

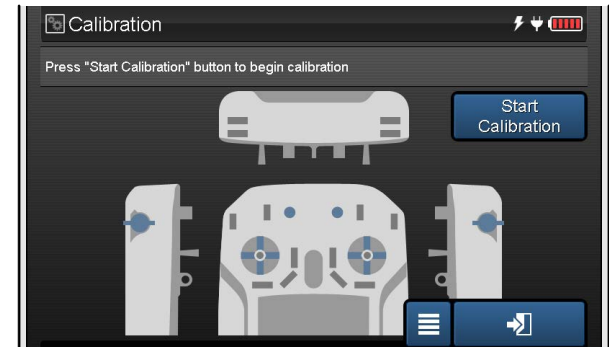
Calibration is performed like this:

1. Go to general settings -> „21.3.3. Calibration“ (page 78)
2. Press “Start Calibration”. Now move all sticks or potentiometer to their maximum positions. Please move the controls gently to the maximum positions, especially the potentiometer and the slider.
3. Moved controls are shown in red and their maximum position will be adapted to +/- 100%.
4. Now press “Confirm”
5. Move the controls to their “zero” position. Also put the throttle/brake stick to the “middle” position.

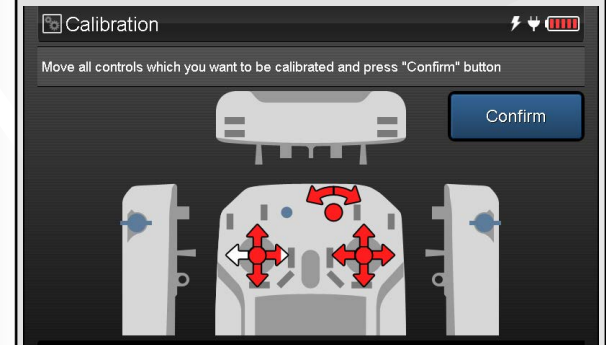
NOTICE

If you are using the MA or MB “feedback part”, adjust the stick just in between the different behaviors.

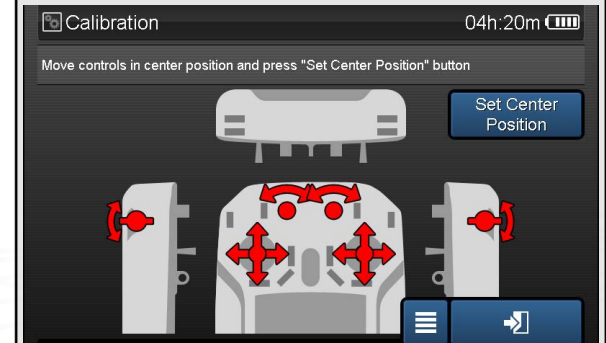
6. Now tab the “Set Center Position” button.
7. This position will now be stored as 0%.



Tab “Start Calibration” to start the calibration process.



Move all controls which you want to calibrate carefully to the maximum positions, as soon as you start to move a control the corresponding control gets marked on the screen and will be filled red when you move it towards the end positions. Press the “Confirm” button when you reached all maximum positions.



Now move all marked controls to the center/middle position, then press “Set Center Position” to store it.

16. Software and firmware UPDATE

16.1. Update process of the BAT transmitter

1. Go to our download center at our web-page (www.weatronic.com) download the BAT 60 or BAT 64 firmware to your PC or MAC. There you will find a detailed instruction as well.
2. Copy only the firmware file to a formatted empty USB stick. Please use the FAT 32 formatting standard.

NOTICE

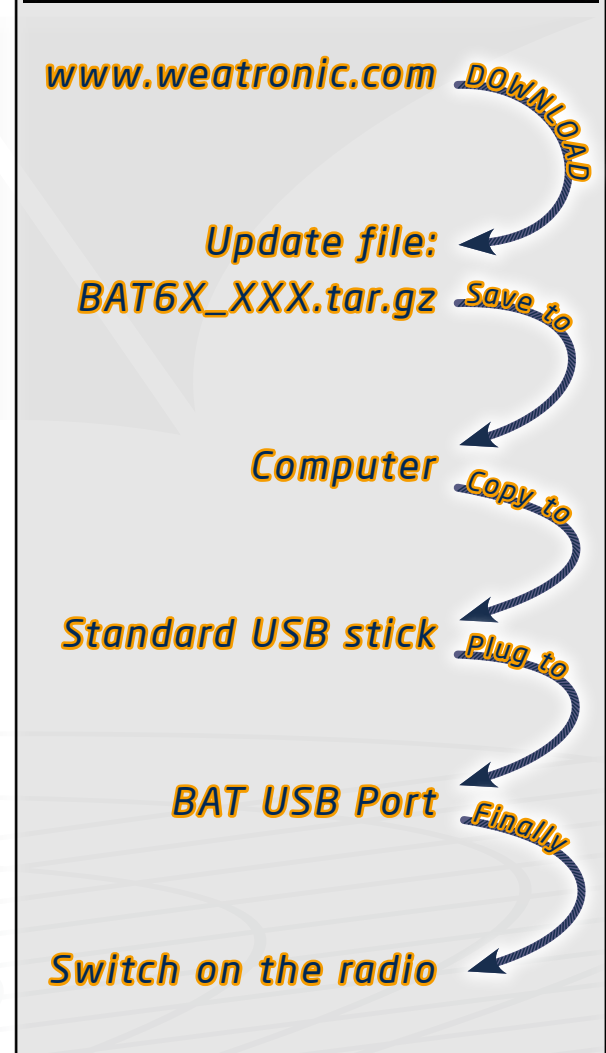
Don` t modify the file. Also the ending of the file have to stay. Don` t extract or unpack the file.

3. Insert the USB stick to one of the external USB ports at your BAT radio.
4. Switch on and wait until the "home screen" appears. This could take up to 10 minutes.
5. After this switch off and remove the USB stick.
6. Again switch on and go to General Settings -> Firmware Versions and check if the correct version is displayed. See the picture on the right.
7. Now please perform a full calibration of your radio. [„21.3.3. Calibration“ \(page 78\)](#)

NOTICE

The Charge Controller can not be updated. Please see [„21.3.1. Battery Manager“ \(page 76\)](#) for more information.

Firmware		Software	
Transceiver	V6.08	Gui Daemon	V6.08
Housekeeper	V6.08	Trx Daemon	V6.08
Stick	V6.08	Watchdog Daemon	V6.08
Switch	V6.08	WebGui	V6.08
Charge Controller	V6.01		



16.2. Update of weatronic receivers (RX-Update)

Please note that we strongly recommend that you always keep your receivers to the latest firmware versions. Only the latest version is recommend and fully tested by weatronic. Never combine and use different versions at the radio and your receiver.

Since the software Version 6.08 the BAT radio is able to make the update of your weatronic receiver. So you will never have to use a computer to keep your receivers up-to-date. The latest receiver firmware version are already stored at the internal receiver firmware folder. Of course you can add other firmware version to this folder. So for example you could add the receiver firmware versions for the transmitter module. Another words the former GigaUpdate software is completely included inside your BAT radio now.

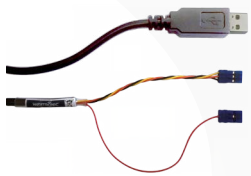
The latest receiver firmware version is already stored at your BAT radio (internal folder "rx-fw").

To update the Gizmo receiver please use the file manager in your BAT radio to copy the firmware on the Micro-SD card of the Gizmo.

You will find the menu under general settings - RX Update [„21.3. General Settings“ \(page 75\)](#)

NOTICE

To update your weatronic receiver (except Gizmo) you have to plug the [weatronic update cable \(WEA37911\)](#) to one of the 2 USB ports of your BAT radio.



NOTICE

The cable has 2 standard servo connectors.

- ☞ The 3 wire cable is the data cable which is always plugged to the SCU port of the receiver. Please consider that the black wire goes to the "S" pin, and the yellow wire goes to the "U" pin.
- ☞ The 1 wire cable is the positive power cable which can be plugged to any servoplug on the receiver

You can choose at the Receiver Type between the automatic recognition(Auto) or you select the type by yourself.

☞ AUTO:

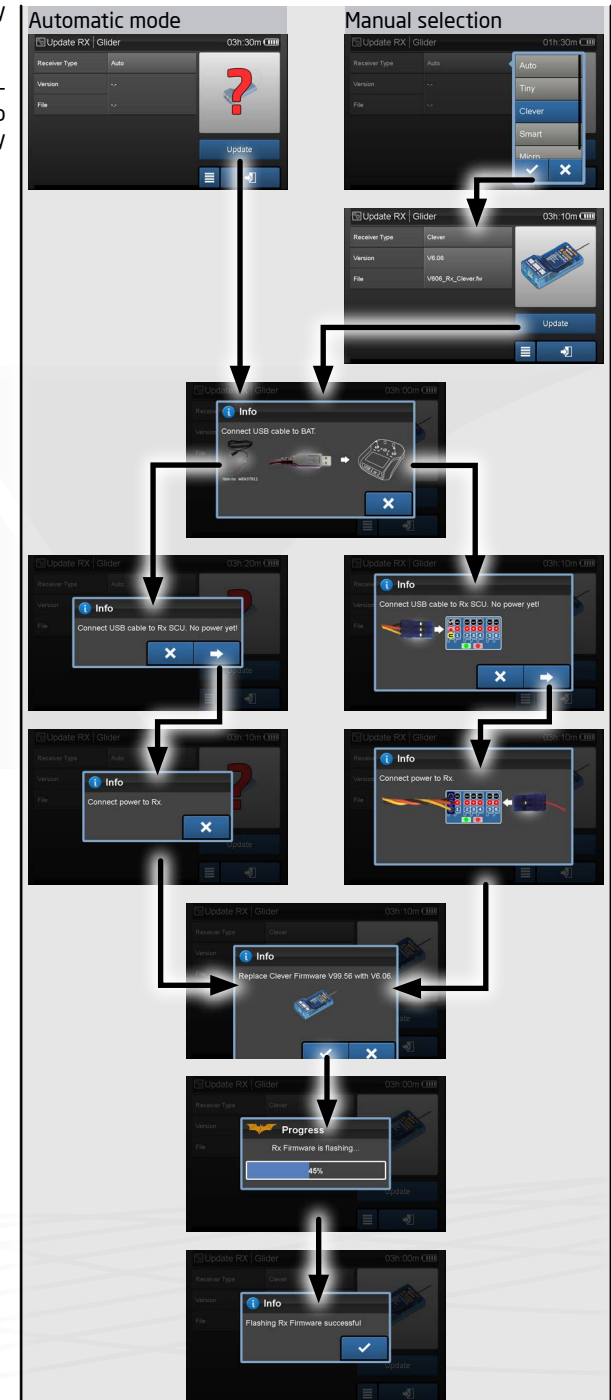
The automatic mode will detected the receiver type and choose the right firmware version. This mode is easy and very handy to use but you have to know the correct placement of the update cable plugs, and you can't choose the firmware version. It will always use the latest and radio corresponding firmware version.

☞ Direct selection of the receiver type:

Here you select the receiver type and also you can choose the firmware version by your own and the step by step wizard will also show you exactly where you have to place which cable. If you don't select a firmware version the latest and radio corresponding will be used.

The menu screen shows some options:

- Receiver type here you can choose if you want to start the "Auto" automatic mode or if you want to select a specific receiver type (except Gizmo).
- Version Only if you selected the receiver type yourself you can tab and select the firmware version which you want to use. Please consider that you can select the firmware versions which are stored at the internal "rx-fw" folder directly. Or if you tab on "Browse" you can browse the internal SD card and choose a file. We recommend that you copy all additional firmware versions to the internal "rx-fw" folder.
- File here you see the selected file name. If you are using the automatic receiver selection mode you will not see the file name here because the system will always selected the latest version automatically.



17. Binding process (TX - RX)

Before binding process please check that there is a matching firmware installed to the receiver. Go to „16.2. Update of weatronic receivers (RX-Update)“ (page 37) if you want to update your receiver.

➤ To bind a receiver to the radio set the receiver to “Binding Mode”.

1. Therefore have it in power off state, and then connect power supply.
2. In between 3-30sec after power up plug the binding jumper to the SCU-port red(+) and black (-). Check the picture in the right. There you see the Tiny, Clever, Smart and the Micro series receivers and where to plug the Binding Jumper. The Gizmo receiver has a special blue binding plug which you just have to plug at the switching board after removing the red “Remove before flight” plug.
3. The receiver will confirm “Binding Mode” by slow blinking (1Hz) of the green LED. So as you can see, it is the same procedure like with the transmitter module before.

➤ Now navigate to the Receiver Configuration menu. Make sure that you have selected the correct receiver type. Tab the “Binding” button. The “flapping-bat” pop-up shows you that the binding is in progress.

➤ After successful binding the pop-up will disappear and the firmware version of the receiver will be shown on the screen. Also the receiver will confirm successful binding with constant green LED.

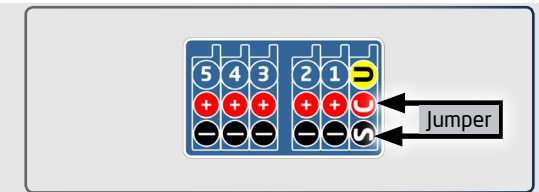
➤ Remove the Binding jumper - finished.

NOTICE

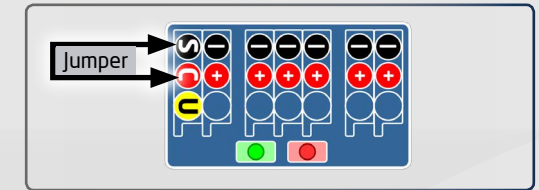
It doesn't matter which device is in “Binding Mode” first. Only weatronic receivers can work with the weatronic transmitters.

NOTICE

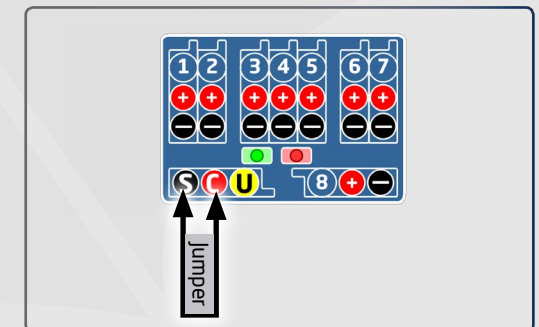
Please do not put the receiver too close to the radio during binding. A distance between 1meter and 10meter should be OK.



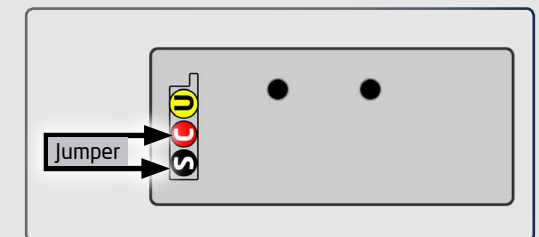
Tiny



Clever series



Smart series



Micro series



The **Gizmo** receiver has a special blue binding plug which you just have to plug at the switching board after removing the red “Remove before flight” plug.

18. RC-equipment installation in your model

- ⚡ The correct installation of the receiver, battery, servos, electric cables and antennas is highly required to operate your model.
- ⚡ Avoid excessive vibration exposure and excessive heat load.
- ⚡ Also make sure that your batteries are in perfect shape and that they are always fully charged.
- ⚡ Take care about the voltage limits of the receiver and the servos you are using.
- ⚡ If you are using regulators please keep in mind that the current limit is not exceeded.
- ⚡ weatronic highly recommends that you study and read all safety notes provided by the manufacture of your used RC- equipment.
- ⚡ For use at the U.S.A. please refer as additional information to <http://knowbeforeyoufly.org/> .
- ⚡ Please always make sure that you stay within the laws and corresponding air-space regulations of your country.

18.1 Some Safety recommendations

- Inspection of cables and solder joints,

We recommend that you examine all installed cable and solder joints regularly for damage and exchange them if they are not in perfect shape. Particularly in vibration-loaded models like glow engine planes cables are highly susceptible to breakage at the solder joints. Always protect solder joints with a heat shrink tube of suitable diameter.

- Anti-jamming of electric motors

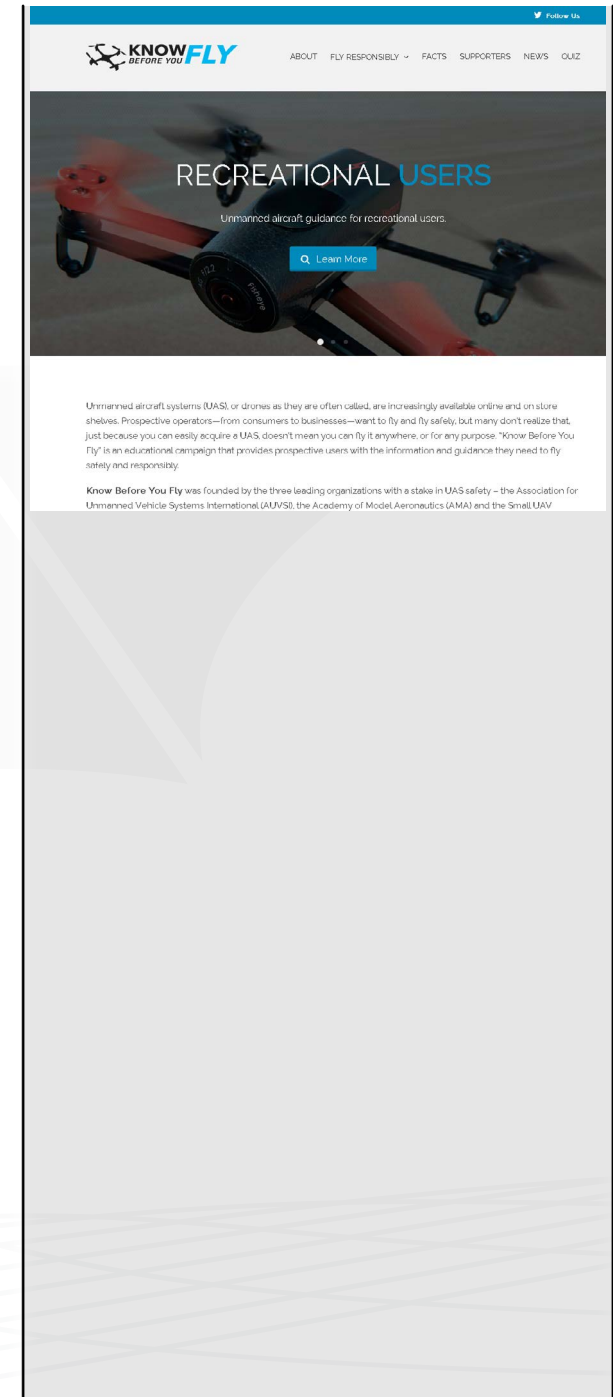
Conventional electric motors with brushes have to be noise suppressed by means of suitable capacitors, as between the collector and brushes sparks are generated which may interfere with the function of on-board electronics. In particular, pump motors for fuel supply in Jets have to get a proper anti-jamming. Please refer to the relevant notes in the operating and assembly instructions of the motor / pump.

- Electronic / magnetic ignition

Electronic ignition and magneto ignition internal combustion engines generate interference that may significantly affect the function of the remote control and reduce the range. Power the ignition systems always with a separate battery, use as short cables as possible and place them near the engine. Use only shielded sparks, spark plug caps and shielded ignition leads. Keep a sufficient distance between the on-board electronics and the ignition system.

- Cable laying at Jets

The ECU (Electronic Control Unit) should not be placed right next to the receiver (distance at least 10cm). Please take care that the cable of the ECU (battery, pump, data bus cables to the turbine) and all other cables of the on-board electronics and the power cables are routed separately!



19. The "setup wizard" - how to add a new model

Navigate to "Model Management" and tab on "Add New Model".

Then choose the type of your model. The category glider also includes gliders with "electric motors" or "up and go". Boat and car would be free model. The "setup wizard" guides you now through the setup process.

For more detailed information please consider the weatronic "setup wizard" quick guide. A printed versions is included inside the scope of supply.

19.1 Airplane

◀ 1st step: Model Configuration

Here you can set up a model name, add an image, select a category for filtering on model management and add an info text for checklist, maintenance, general purpose...

The function preselect will define the way you get a preselected list of functions: This feature is still limited to the "basic" option.

◀ 2nd step: Select Stick Mode

Select your stick Mode 1 to 4. Please consider that you can change the controls and trims for each function later anytime.

◀ 3rd step: Receiver Configuration

Here you can choose and bind the receiver [1.7. Binding process \(TX - RX\)" \(page 38\)](#) for your model as well as adjust some basic setup. We recommend that you adjust the right battery voltage warning. Also you can add sub receivers. They can be used as parallel receivers but also for extending the number of servo plugs.

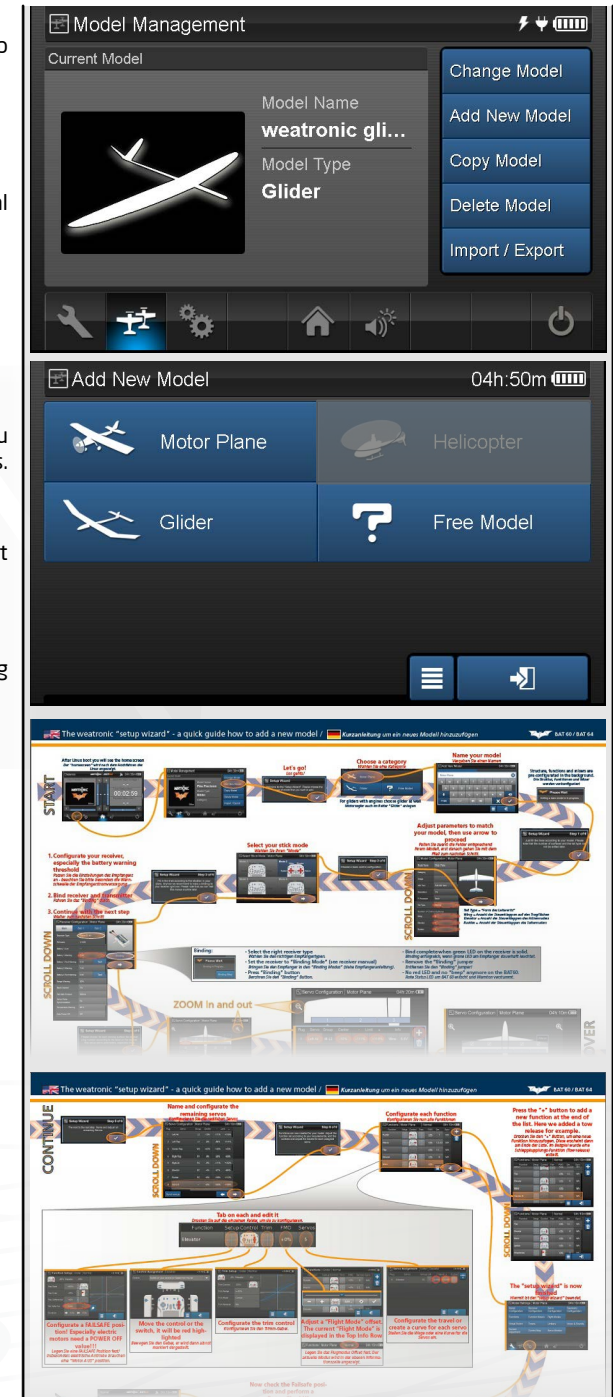
◀ 4th step: Servo Configuration graphic view

In this menu you have to tell the BAT radio everything about the servos used and their location in your plane. Just add the servos to the control surfaces and set up name, center and limits properly.

◀ 5th step: Servo Configuration list view

This is the list of all your servos. Please configure now the remaining servos that are not handled via graphic view. After this a model with all functions according to your settings will be created. Now please adjust the travels for each function and each servo.

19.2 Helicopter



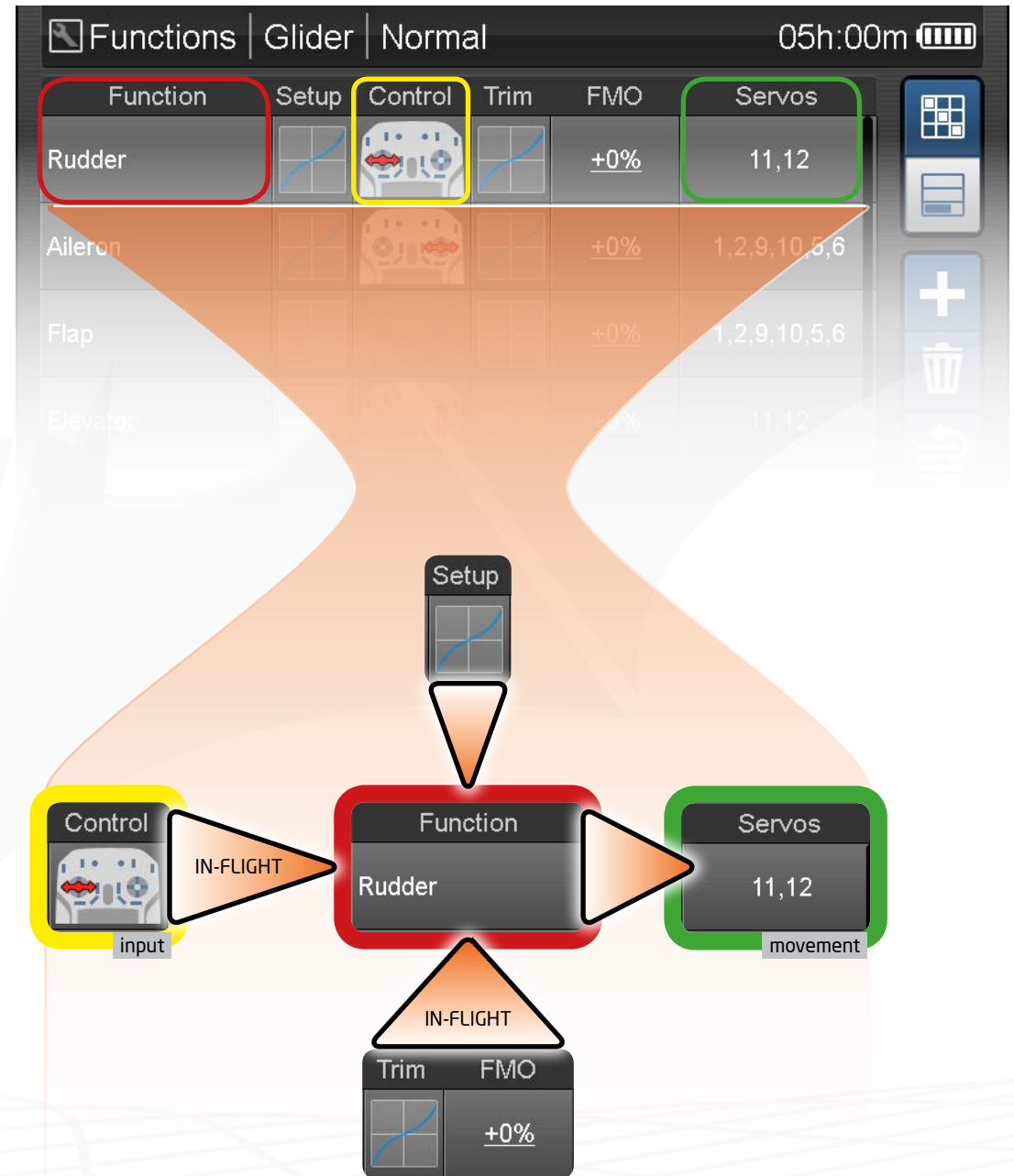
20. weatronic programming philosophy

- ✦ With the weatronic programming style you are no more limited to channels or predefined and fixed structures.
- ✦ You are only limited by the number of servo plugs on the receiver! For example the Gizmo 30 offers 30 servo plugs.
- ✦ The model setup is organized in functions. These could be e.g. aileron, elevator, etc. you can also choose the name yourself.
- ✦ Usually each function needs one control, e.g. one stick axis, switch, etc. to operate during flight.
- ✦ Then you assign up to 10 servos to each function and set the dedicated maximum travel according to your wishes, mechanical or aerodynamic requirements for each servo separately.
- ✦ Also you can modify your functions with all the assigned servos under function setup. There you set up values like
 - Flex Rate (flexible "DUAL RATE")
 - Flex Expo (flexible "EXPONENTIAL")
 - Flex Differential (flexible "DIFFERENTIAL")
 - Curve edit (33 points)

NOTICE





for correct function of differential your servos need to have correct L(ef) R(ight) attribute.

- ✦ Also we strongly recommend that you adjust proper failsafe for each function. At least engine cut off to avoid any danger or hazardous risks. Remove the propeller when you adjust your plane, if you use an electric motor.
- ✦ When necessary you can add a Trim or a constant (flight mode-) offset (FMO)



21. Programming menu structure

The menu structure is divided in **4** main programming parts, tab on the corresponding button at the lower main navigation row to enter

-  **1*** „21.1. Model Settings“ (page 42)
-  **2*** „21.2. Model Management“ (page 74)
-  **3*** „21.3. General Settings“ (page 75)
-  **4*** „21.4. Output Settings“ (page 81)

21.1. Model Settings



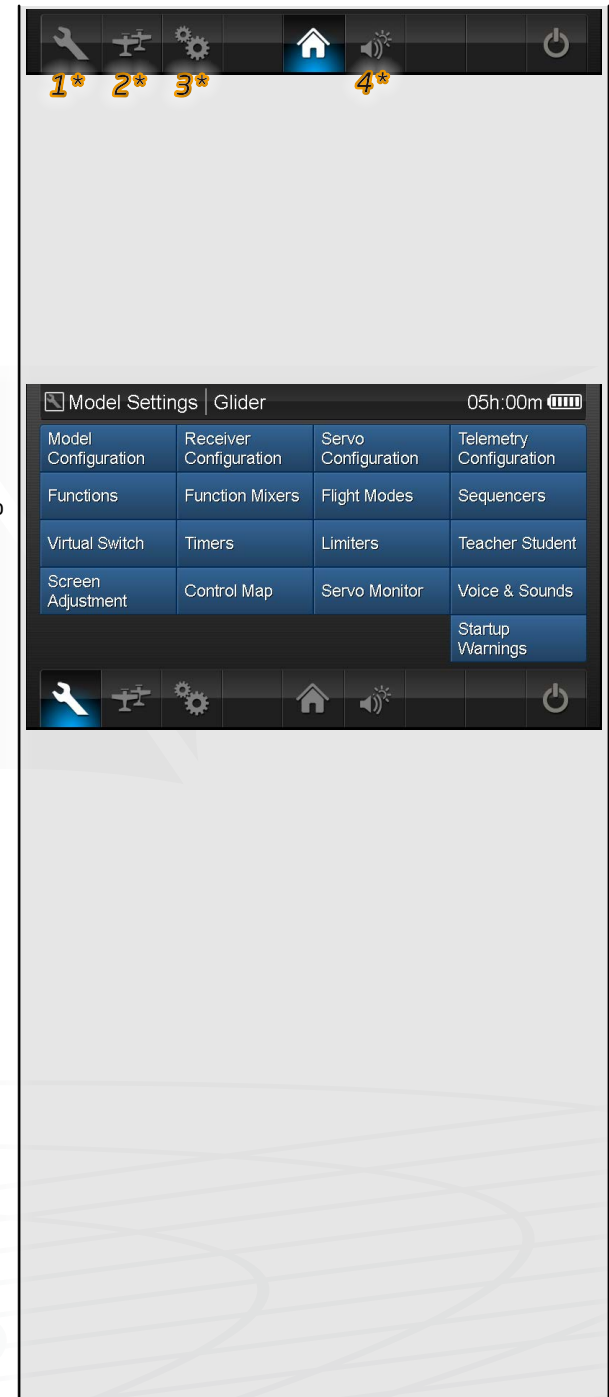
Tab on the wrench at the very left end of the navigation row. You will see 17 menu points:

NOTICE

There is a difference if you either created your model with the “setup wizard” or manually by choosing “Free Model”. If created by the “setup wizard” some options are not editable, they are marked with a small star symbol (*).

Tab on the button and you will enter the menu. See here a short description of each menu. Please check the following pages for detailed information.

- [Model Configuration](#) Here you can adjust all general options for your model
- [Receiver Configuration](#) All setup which is related to the used receiver inside the model and also the “binding” can be done here.
- [Servo Configuration](#) Whenever you want to change general servo-related values you can adjust here the center and the limits for each servo. Please consider that these values are fixed and are only editable here. For example no function can somehow move the servo beyond the adjusted limits.
- [Telemetry Configuration](#) LinkVario setup and Blue-tooth setup, like thresholds adjustments and configuration of attached sensors.
- [Functions](#) This is the heart of the weatronic programming philosophy
- [Function Mixers](#) Here you can create mixing relations between different functions
- [Flight Modes](#) Create flight modes which give you the chance to adjust your model according to different situations during operation.
- [Sequencers](#) Gives you the amazing possibility to realize fully customizable sequenced servo movement patterns.
- [Virtual Switches](#) Combine 2 controls to create virtual switches.
- [Timers](#) Add timers like you need them.
- [Limiter](#) Here you have the possibility to limit functions, which gives you a really needful safety feature.
- [Teacher Student](#) This give you several ways to connect another radio with the Bat 60 or Bat 64
- [Screen Adjustment](#) This menu allows you to fully customize your home screen and to add telemetry screens.
- [Control Map](#) Information about all servos and their relation to each function.
- [Servo Monitor](#) Here you see all servo position and movements.
- [Voice & Sounds](#) Voice Output setup for thresholds and warnings
- [Startup Warnings](#) Whenever the model memory is activated, either at boot-up or if changed to from another memory you can adjust some warnings. If for example the motor function is not at idle the radio will display the function and your customized text and the ON/OFF button will flash purple and beep with a long tone.



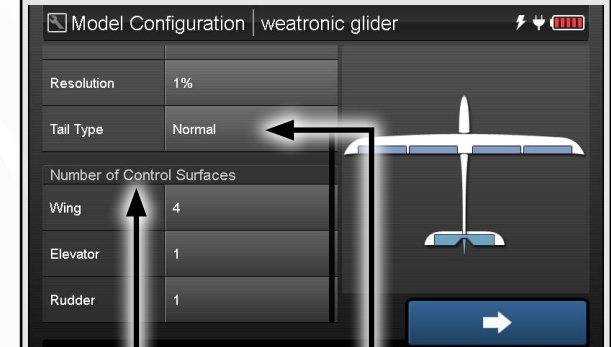
21.1.1. Model Configuration

- Model Name just tab and use the keyboard to enter the name
- Choose a Category this feature is not available yet.
- Choose an Image max. recommended resolution : 500x500 pixel. You can only choose pictures from the internal image folder. Use the "file manager" [21.3.2. File Manager](#) (page 77) to copy pictures from a USB stick to the internal image folder. Please do not use pictures which are bigger than 0,5 MB, as this will slow down the Linux PC.
Supported data format
 - *.jpg / *.jpeg
 - *.gif
 - *.png

NOTICE

Select the picture by DOUBLE TAB it.

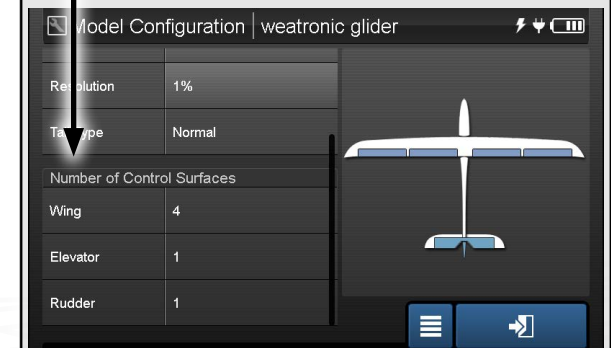
- Info Text do some notes regarding your model. This Info will be shown for example at the "Change Model" menu.
- Choose the Resolution 0.1% or 0.5% or 1%, all values during programming this model will be
 - very fine (0.1% = 4000 steps) or
 - middle (0.5% = 800 steps) or
 - normal (1% = 400 steps)
- F. Preselect None or basic or advanced function preselect (chapter 19.1.)
- (*) Tail Type Normal or V-Tail or Delta
- (*) Amount of surfaces is visualized by the graphic on the right. This numbers are really only the physically moving surfaces. Not to mix it up with the amount of servos.



The tail type and the Number of Control Surfaces

can be adjusted ONLY during the "setup-wizard".

You can ONLY ADJUST this during the wizard. Later it will be dark-gray shaded which means you can't change it.



21.1.2. Receiver Configuration (BINDING)

Main and Sub receivers: here you can add 2 more receivers as sub receivers.

Only the main Rx is capable of handling additional telemetry and sensors. - Read the ADDITIONAL INFOS REGARDING THE GIZMO RECEIVER AT [„21.1.2.1. Gizmo receiver series“ \(page 45\)](#).

- Receiver Type Choose the correct receiver type, a picture is shown on the right.

NOTICE

Please consider that you can damage your programming if you change to a receiver with less servo-plugs. As servo assignments will be deleted.

- Firmware If the receiver is switched on and connected it will show the current firmware version here. If the receiver is out of range it will show the last known version.
- Battery Live shows the voltage of the receiver power supply.
- Battery Warning threshold please adjust the right threshold according to the battery used for the power supply of your model. The radio will give you a warning (3 x beep and simultaneous red LED blinking of the ON/OFF button) by reaching the threshold. **BEEEEEP _ BEEEEEP _ BEEEEEP**
The default value is 6.8 Volts. This thresholds fits for 2S LiPo batteries especially in combination with the Gizmo receiver series.

NOTICE

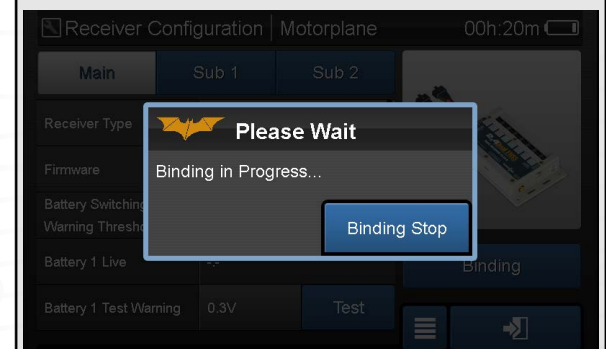
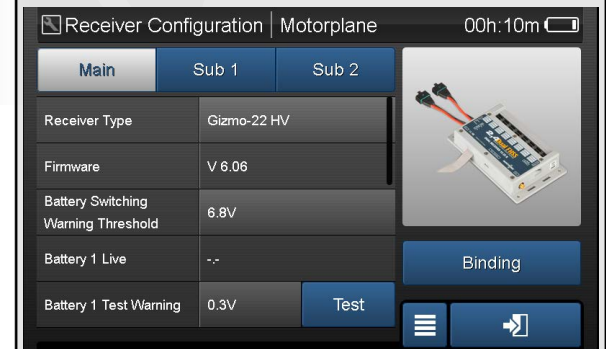
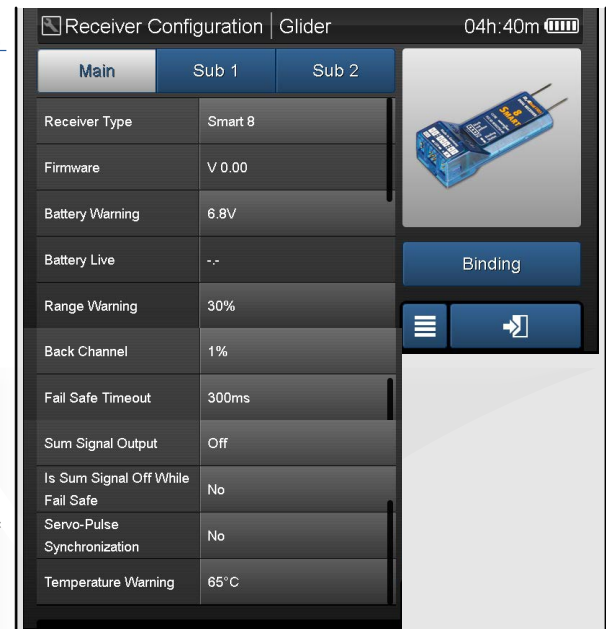
We strongly recommend that you always check the volume adjustment of your radio before you start to operate your model! Make sure you can hear the beeps of the radio even if the surrounding is very loud.

- Range Warning threshold The radio will give you a warning (2 x beep and simultaneous red LED blinking of the ON/OFF button) by reaching the threshold. **BEEEEEP _ BEEEEEP**
- Back Channel warning threshold The radio will give you a warning (1 x beep and simultaneous red LED blinking of the ON/OFF button) by reaching the threshold. **BEEEEEP**
- Fail Safe Timeout Whenever there is no connection to the radio, the receiver will adjust the "failsafe" position after this timeout. Check the [„21.1.5.1.4. Fail Safe Pos.“ \(page 55\)](#) Fail Safe Pos for more information.
- Sum Signal Output The last physical plug at the receiver is used as output for the "standard" PPM signal (for example the Tiny 5 uses plug-5 and the Smart 8 uses the plug-8). Meanwhile there is also the very common SRXL protocol available. The SRXL protocol is using servo-plug 1. Please consider that the Micro and the Gizmo receivers have no Sum Signal feature.
 - Standard PPM signal
 - SRXL Multiplex 12 and SRXL Multiplex 16
 - SRXL weatronic 16

NOTICE

The SRXL and the weatronic protocol output is at the **FIRST** servo plug!

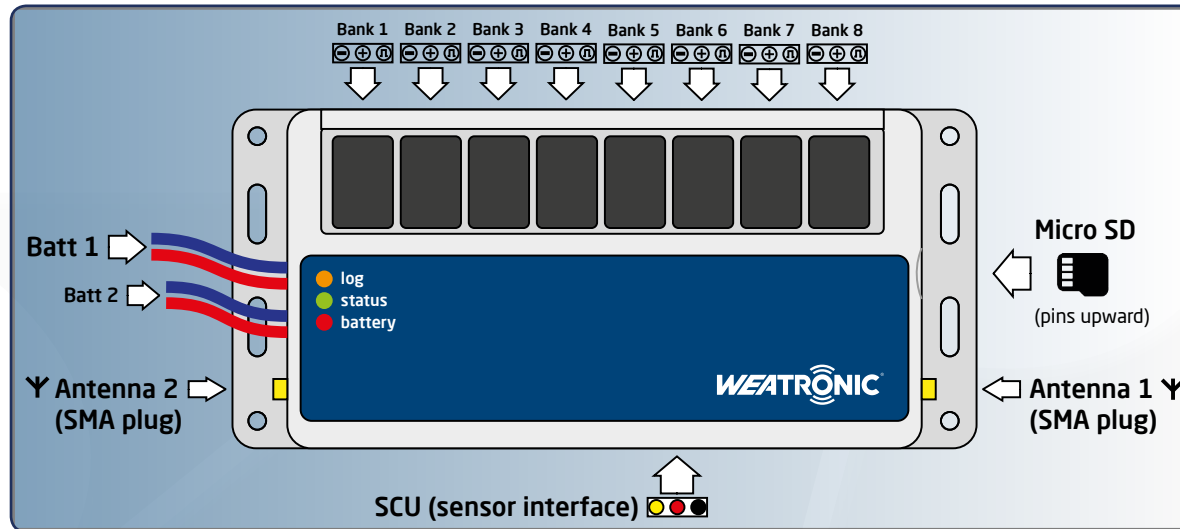
- Is Sum Signal Off While Fail Safe If you want you could decide here to deactivate the Sum Signal Output whenever the "Fail Safe" event is occurring.
- Servo-Puls Synchron... Check the "weatronic - servo excitation" information at the download overview section at www.weatronic.com. If the output is synchronized be aware of the extreme high load to the power supply.
- Temperature Warning threshold.
- BINDING button Press here to start the binding process. The BAT radio will start to search for weatronic receivers which are also in "binding mode". You will see a progress pop-up. The pop-up will disappear when the binding process was successful or if you press the "Binding Stop" button. Please read [„17. Binding process \(TX - RX \)“ \(page 38\)](#) for detailed information about the binding process.



21.1.2.1. Gizmo receiver series

21.1.2.1.1. Overview (top view)

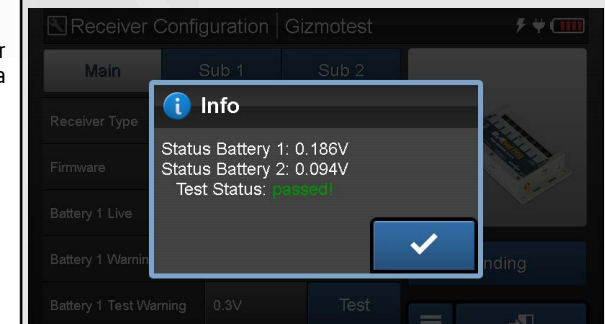
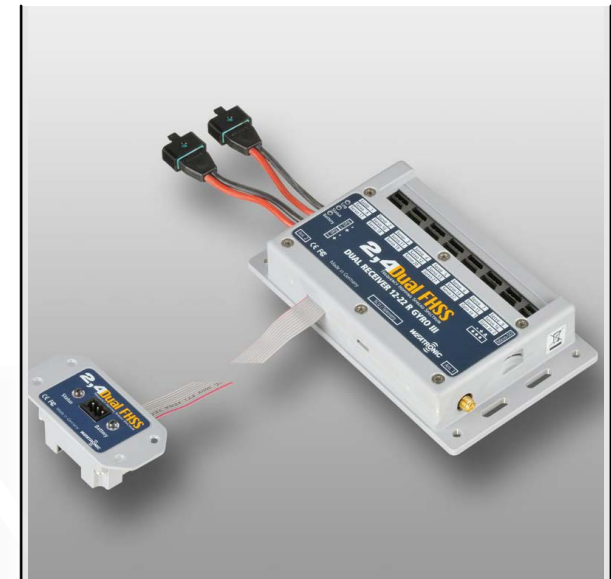
- Always check your batteries before each operation.
- Please use the "Voice and Sound" option to get proper information about the actual voltage of your receiver battery.
- NEVER fly if the reserve battery (Batt 2) is not fully charged and in perfect shape.
- Please note all important informations about proper use of your batteries and read the care and safety instruction which came with the battery carefully.



21.1.2.1.2. Battery Management

The Gizmo receiver series features a unique safety battery management. The main idea is to use ONE of the 2 batteries as the main battery (Batt1) and the other one as the reserve battery (Batt 2) which only is used for emergency situations. So it makes perfectly sense to use a high capacity battery for battery 1 and a smaller for battery 2. The Gizmo has some special settings: the SWITCHING THRESHOLD and the BATTERY TEST

- For power supply we recommend to use identical technology for the main and the reserve battery:
 - 6 - 7 cell NiXX pack (nominal voltage 7,2V - 8,4V) or
 - 2 cell Lipo pack (nominal voltage 7.4V) or
 - 3 cell LiFe (nominal voltage 9.9V) Please NOTE: This is the maximum voltage which the Gizmo receiver can handle!
- Whenever the momentary in use battery (normally Batt 1) gets below the adjusted "Battery Switching Warning Threshold" the Gizmo receiver will switch to the other battery (normally Batt 2). The fast single flash red LED at the receiver / switching board indicates that the battery 2 was at least once in use during your flight.
- We strongly recommend to set the "Battery Switching Warning Threshold" to
 - 6.6 Volt for 6 cell NiXX / 7.7 Volt for 7 cell NiXX
 - 6.8 Volt for 2 cell LiPo and
 - 8.4 Volt for 3 cell LiFe
- On every power up the Gizmo will test (approx. 7 Amps for 0.25 seconds) the 2 batteries. This test can also be done manually with the test button at the receiver configuration menu. By default the maximum voltage drop-down is set to 0.3 Volt. We recommend to exchange the battery if the drop-down is higher. The permanent red LED at the receiver / switching board indicates that the test did not succeed.
- Go to [„21.1.13. Screen Adjustment \(home and telemetry screens\)“](#) (page 68) and select the RX USED BATTERY tag if you want to see the currently used battery ("1" representing the Batt1 and "2" the Batt2)



21.1.2.1.3. Servo banks (Voltage output adjustment)

- ✦ The Gizmo receiver features 8 so called "servo banks". Each of this bank has its own electric shortcut protection and current overload protection. Another words if there is a problem at one of the banks, all the others still will work normally.
- ✦ We strongly recommend to put very important servos on different servo banks. For example if you have two elevator servos, plug this two servos on different banks so if you will have an electric problem with one servo the other one will still do its job.
- ✦ Each bank can be set to another voltage. At the Gizmo you could choose between 5.5 Volt (which is default) and 7.4 Volt (for High Voltage Servos). The "12-22" or "12-30" receiver can be set to 4.8 Volt and 6.0 Volt. Please set this according to your used servos. Make sure that the servos are able to handle the voltage.
- ✦ You can adjust the voltage at the servo configuration menu [„21.1.3. Servo Configuration“ \(page 47\)](#), scroll a little right and you will see the voltage column. Tap and select the voltage.

21.1.2.1.4. Antenna alignment

The Gizmo receiver is a dual receiver and you can connect two antennas. Also you can put extensions cables, check our web-shop. There are several different length available.

NOTICE

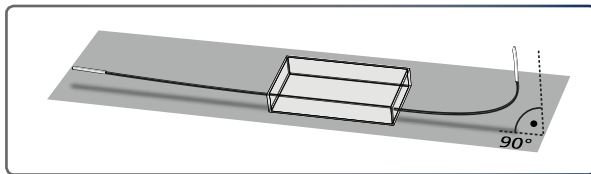
The connectors are standard SMA so please screw them hand-tight! Don` t use any wrench or plier, as the thread can be easily damaged.

There are 2 different types of antennas available.

- ✦ the "coaxial" (WEA37724) and
- ✦ the "patch" (WEA37921).

Use our patch antenna to increase your range to the maximum possible 2.4GHz capabilities. Due to the design and the ideal radiation characteristics these antennas are clearly superior to the conventional rod or stud antennas. In addition, the weatronic patch antennas are circularly-polarized*. No matter which mounting orientation in the model, the reception is equal. So every modeler will get a solid connection even with tricky mounting circumstances and of course no matter which flight attitude, best reception is guaranteed.

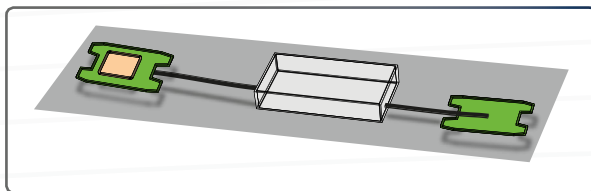
- ✦ If you use the standard coaxial antenna please consider that only the last 29mm are the active parts.



coaxial antenna laying scheme

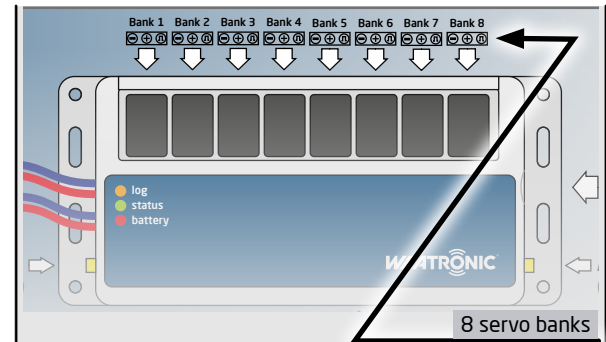
- Both antenna cables must be laid without kinks and the bared part has to be placed as far away as possible from all metal or conductive parts.
- Carbon fiber reinforced hulls, hulls with metal-finish or metal-sheeting are strongly shielding, and therefore the antenna (the last 60 mm) has to be necessarily moved to the outside.
- There the antenna also should not be fixed directly on the shielding material.
- A certain distance has to be maintained. For optimal reception the last 29 mm of the antennas must be fixed at a 90° angle to each other.

- ✦ If you use the patch antenna please note that the ceramic block with the electronic board underneath is the antenna itself.

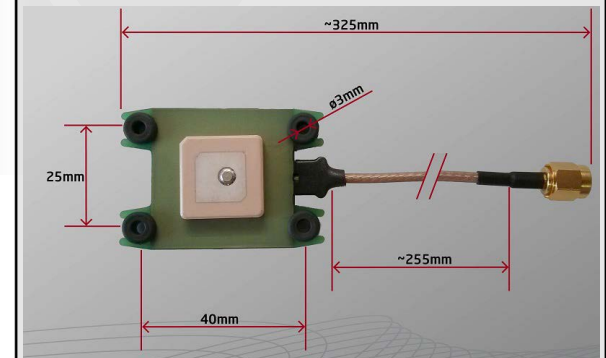


patch antenna laying scheme

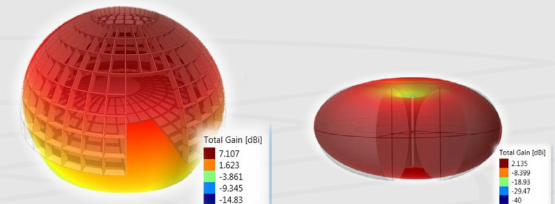
- The cable between receiver and antenna must be laid without kinks and the antenna has to be placed as far away as possible from all metal or conductive parts.
- Carbon fiber reinforced hulls, hulls with metal-finish or metal-sheeting are strongly shielding, and therefore the antenna has to be necessarily moved to the outside. There the ceramic block should point away from the shielding material.
- For optimal reception the ceramic blocks must face away from each other. Up and down or left and right is recommended.



8 servo banks



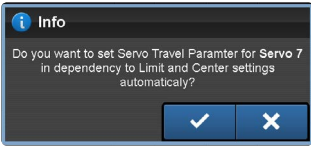
weatronic 2.4GHz patch antenna (WEA37921)



Directional characteristic of the weatronic patch antenna (left) and a conventional stud antenna (right) - due to the hemispherical radiation pattern the patch antenna has up to 10 dB gain compared to stub antennas

21.1.3. Servo Configuration

There are 2 different views for this screen. Tab on the top right button to switch between the 2 views. The "list view" is the default view. All servos which are configured and assigned via the "graphic view" are only fully editable in the "graphicview". ONLY the center of each servo can be set in both view.



NOTICE

Whenever you change the center or the limits of a servo, you will be asked before you leave the page if you want to automatically adjust the travel for this Servo in relation to center and limits. Be Aware that all your customized travel values will be overwritten, maybe also the direction of the servo movement could be changed. This happens for the servo travels for each function where this servo is assigned to.

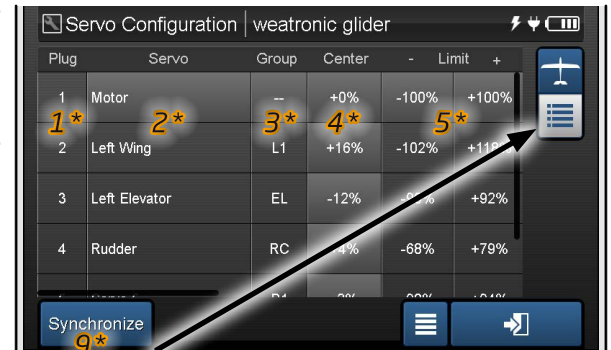
- 1*** Plug, the physical plug number on the receiver
- 2*** Servo, here you can change the servo-name. This will help you to get a perfect overview.
- 3*** Group, this gives you the option to create servo-groups manually (or you will see a index created automatically be the "graphic view").
 - If created by the "Graphic View"
 - » The first character indicates: L = left wing / R = right wing / E = elevator / R = rudder / W = Wing
 - » Second character indicates the position: at the wing it is a number, 1 starts from the middle at the tail: C = Center / L = left side / R = right Side
 - If you add the group manually you have to choose a Master and up to 7 Slave. The group-index is separated in two letters:
 - » First letter: "M" for "masterservo", "S" for all "slaveservos".

NOTICE

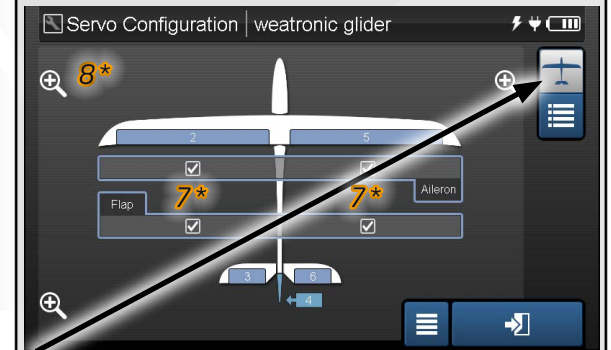
For the "slaveservo" the center and the limits will be suppressed. To adjust the "slaveservo" you have to go to the "Synchronize" menu. See [„21.1.3.2 Servo Synchronization“ \(page 49\)](#). Please also note that the a servo which is already assigned to a function can not be selected/chosen as a "slaveservo"

- » Second letter: there are simple letters (from A to N) for each group.

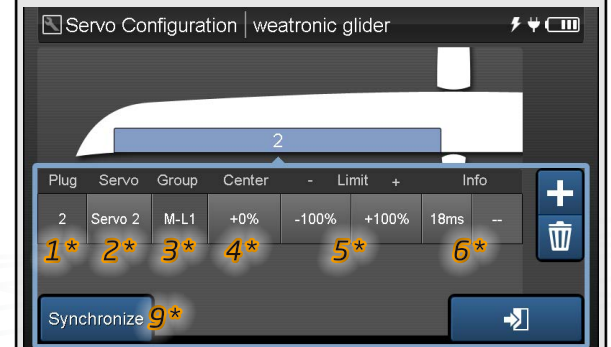
- 4*** Center, tab and adjust the zero/center position of the servo.
- 5*** Limit, We recommend that you adjust the limits of each servo before you go on with programming. If you tab on one limit you see the "Test" button attached to the pop-up on the lower left corner. By tabbing this button the servo will move very slowly to the adjusted limit value. By pressing again it will move back to center position. Use this function to make sure that the servo is not mechanical blocking at the limit positions. The limits values are fixed, which means the servo will never move beyond.
- 6*** Info, If a Gizmo receiver is selected you will see the option to adjust the voltage for this servo-bank, please refer to [„21.1.2.1.3. Servo banks \(Voltage output adjustment\)“ \(page 46\)](#). Furthermore you can choose a frame rate for this servo-plug. Please make sure that the attached servo can handle the frame rate. The default value is 18ms and this rate matches all common used servos. See [„21.1.3.1 Servo Impulsrate \(ms\)“ \(page 48\)](#) for detailed information about the impulsrate/framerate.
- 7*** Checks, as a default all wing surfaces are assigned to the aileron and flap function, but you can un-check this for each surface.
- 8*** ZOOM, Use the zoom buttons on the corners to navigate to the surface you want to adjust. Also you can swipe left/right and up/down if you have zoomed in.
- 9*** Synchronize button, tab here if you want to adjust the travel of slave servos which you linked to master servos. [„21.1.3.2 Servo Synchronization“ \(page 49\)](#)



The "list view" shows all servos according to the type of receiver. Here you can name the servo, adjust the center and the limits.



The "graphic view" shows the model top view and allows the "setup wizard" to create functions accordingly. You can always change the assigned servo plug, but be aware that the values for center and limits are reset to default.



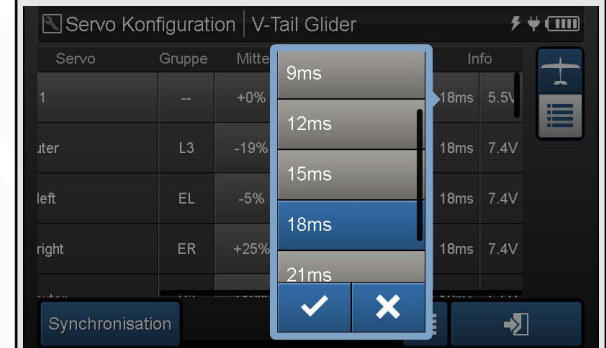
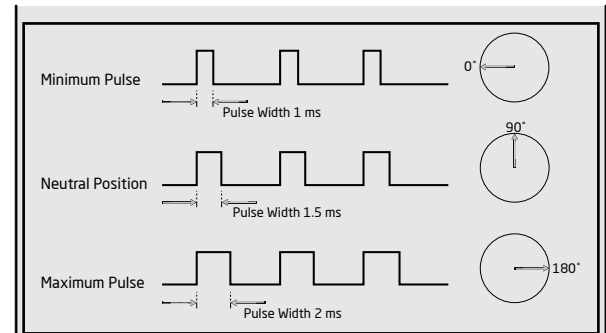
Zoomed in "graphic View"

21.1.3.1 Servo Impulsrate (ms)

- Servos and similar components like actuators or electronic vales are controlled by voltage impulse.
- The information to which position the servo should move is given by the length of this voltage impulse. Normally the impulse is between 1,0 and 2,0 ms.
- The voltage impulse is repeated in frequent time lags. This time lag is called Impulsrate or Frame rate.
- Every weatronic receiver is capable to adjust the Frame rate for each servo output separately. This allows you to connect every available servo, from the "ancient" ones to the modern digital brushless extremely fast "gyro" gimbal servos.
- Also combinations are possible! Furthermore the servo impulses are stabilized to 5 volt.

Please consider the chart as a rough guideline. Especially the digital servos are reacting way faster with smaller pulse rates.

Impulsrate:	Comment:
18ms (default)	<ul style="list-style-type: none"> - All common servos work proper
21ms + 30ms	<ul style="list-style-type: none"> - See as above - some analog servos could loose some torque - could cause issue with switch points at regulators or magnetic valves
15ms	<ul style="list-style-type: none"> - Faster response time - should be no problem for common digital servos - analog servos could start to have a slight shacking causes the servos to get warm and maybe reduces the life span - Could improve the torque at some analog servos
9ms + 6ms	<ul style="list-style-type: none"> - Even faster response time - only recommended for digital servos - DO not use for analog servos - could damage the servo
3ms (exception)	<ul style="list-style-type: none"> - Especially for „fast Gyro-Servos“ - extremely fast response time - NEVER use for normal servos. It will DAMAGE the servo!



NOTICE

Analog servos will not handle smaller pulse rates, so you can destroy them or at least shorten the gear life time. If you are not sure please adjust high rates or leave the default at 18ms.

NOTICE

weatronic will not take any responsibility for any damage due to wrong adjustments of pulse rates.

21.1.3.2 Servo Synchronization

This menu helps you to adjust servo groups and also let you run and setup the automatic synchronization. Mainly you will have to use this function whenever you want to combine servos to do the same movement. Therefore you have to decide for each group a so called "Master" Servo and then you can add so called "Slave" servos which will move in relation to the "Master".

The Master Servo will be shown like a normal servo with center and limits and you can select and assign this servo to a function. All "Slave" servos will not be editable normally any longer, you will not see a center or limit value at the servo configuration menu anymore, furthermore they are not selectable anymore at the servo assignment menu. If you want to adjust them you have to go to the "Synchronization" menu. There you can set a deviation curve for each of them in relation to the "Master" servo.

The "Auto Synchronization" is only available at the Gizmo receiver series and only makes sense if the "Master" and the "Slave" servos are attached rigidly to each other. This automatic process will check the movements of the slave servos and adjust them by checking the currents. So please make sure that the Master and the Slave servos are plugged on different servo-banks and that no other servos are attached during the automatic synchronization. After the process you can check the deviation curve of each slave servo and also double-check the live current at the screen.

On the left of the menu there are some general options and on the right you see the servos of the group.

General Options:

- Group, tab and choose the group which you want to configure. The name of the group is based on either the servos which are assigned via the "Graphic View", or if you created the group by yourself.
 - If created by the "Graphic View"
 - » The first character indicates: L = left wing / R = right wing / E = elevator / R = rudder / W = Wing
 - » Second character indicates the position: at the wing it is a number, 1 starts from the middle at the tail: C = Center / L = left side / R = right Side
 - If you added the group manually there are simple letters (from A to N) for each group.
- Accuracy, there are 3 different options. This defines how many points will be editable at the slave deviations curves.
 - Easy, center and each 4th point on the "slave" curve will be adjustable (automatic synchronized) at the curve. If a point would be right at the red limit it will be removed. The 200% point is always editable.
 - Standard, each second point
 - Fine, all possible points

NOTICE

If the fine accuracy is selected the automatic synchronization will run for a very long time.

- Max. Current, (Gizmo only) here you can adjust the maximum current during the automatic sync procedure. We recommend different values according to the used servos. If due to very soft or very stiff flaps or push-rods, the synchronization process may have no useful result, these limit can prevent damages to the servo gears, push rods and flaps.
 - Analog servo "standard" : 1.0 A
 - Analog servo "power" : 1.5 A
 - Digital servo "standard" : 2.0 A
 - Digital servo "power" : 3.0 A
 - Digital servo "extreme power" : 5.0 A
- Travel Limit, (Gizmo only) here you can adjust the maximum travel during the automatic sync procedure. The default value is 25%. That means that the slave servos are moving maximum 25%, if they are not reaching the previous adjusted "Max. Current" value before. If due to very soft or very stiff flaps or push-rods, the synchronization process may have no useful result, these limit can prevent damages to the servo gears, push rods and flaps.

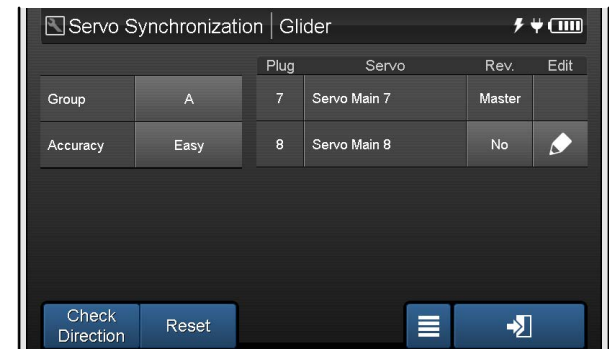
Servos List:

- Plug, the physical servo-plug number.
- Servo, the name of the servo just for info.
- Rev., tab here and change the direction of each slave servo separately.

NOTICE

Check this BEFORE you connect the linkages if the servos are attached to the same surface! Use the "Check Direction" button to control it.

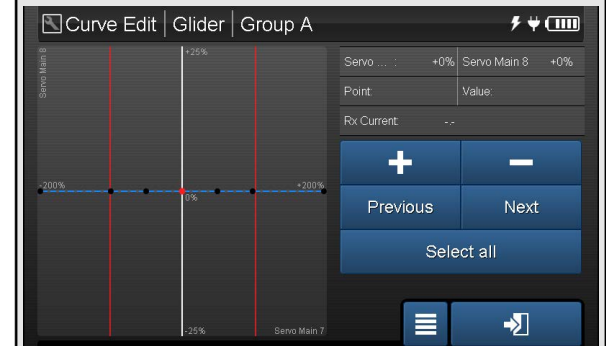
- Edit, tab here and check and maybe even edit the deviation curve of the slave servo. Please consider that the servos will automatically and slowly move to the selected point on the curve. All servos of the group will not longer react to functions anymore. Leave the page and the group will move again like normal.



Servo Synchronization menu for Micro, Smart, Clever and Tiny receivers series



Servo Synchronization menu for Gizmo receiver series



Curve edit with easy accuracy

21.1.3.3 Automatic synchronization (Gizmo receiver)

Here you will see a short example-instruction how to use this very important and useful feature of the Gizmo receiver series. Please also read the common information about the synchronization of servos at „21.1.3.2 Servo Synchronization“ (page 49).

1. PLEASE consider the following points before you try to synchronize servos:
 - > Use the “Rev.” option to make sure that all servos are moving the same way! You can check this with the “Check Direction” button.
 - > All servos must have a rigid linkage to each other or to the same surface, otherwise the current measurements will not work.
 - > Adjust the mechanical limit for the master servo without attached slave servos.
 - > Only use similar servos, weatronic can not take any liability due to damaged servos, linkages or flaps
 - > For a good result please unplug all other servos
 - > Use different servo banks for each servo
2. First of all you have to create a “Servo Group.” there are 2 way to do this:
 - Automatic** created group by the servo configuration graphic view.
Whenever you assign more than 1 servo to a blue surface the system will create a group. The first Servo will be the master servo and the next one will be slave servos.
 - Manually** created by your own at the servo configuration list view.
Here you can tab and choose for each Servo if it should become a Master servo or a slave servo. Just tab the group button at the servo row and choose from the pop-up
3. Go to the Synchronization menu. The menu is located at the servo configuration menu at the lower left corner.
4. Select the group which you want work with.
5. Before you go on please remove the linkage from the Slave Servos and check that all servos are moving in the same direction. You can reverse each slave servo individually with the “Rev.” option.
6. Now adjust the “Accuracy”, “Max. Current” and the Travel Limit” (refer to the detailed information at the previous „21.1.3.2 Servo Synchronization“ (page 49)
7. The next step will be to attach all servos to each other or to the same surface. Please consider that this connection should be rigid in order to get a perfect result for the automatic process.
8. Finally you can press the “Auto Sync.” Button and you will see a pop-up with a progress bar

NOTICE

Depending on the accuracy and the amount of servos the process can take several minutes. Please be patient.

9. After the process is finished you could check the generated deviation curves of each slave servo by tabbing the pen symbol at the “Edit” column. There you will see the curve and also you could use the live current to check if the current remains as low as it is at the center position.

21.1.3.4 Curve Edit Servo Synchronization

The Curve edit menu at the synchronization menu looks a little bit different to the common curve edit. Graphic shows the deviation curve of the slave servo in dependence to the Master curve.

- 1* 2 red vertical Lines are the -/+ limit values of the Master Servo.
- 2* Black Dots are editable and are created according to the selected accuracy.
- 3* Red Dot / Red Dots are the ones which you can move. Select them with the “Previous”, “Next”, “Select all” and “None” buttons.
- 4* RX Current is only displayed if a Gizmo receiver is in use.
- 5* “PLUS” and “MINUS” button will move the red dots up or down. You can also use the “Numpad Rotary Encoder”
- 6* Use the option to select the point which you want to edit.

NOTICE

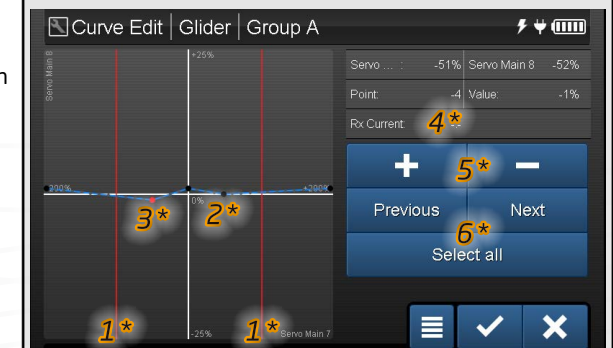
The Group servos will move to the selected single point. All other input at the servos will be disabled.



Servo Synchronization menu for Gizmo receiver series



Progress bar during the automatic synchronization



Curve edit menu for servo synchronization

21.1.4. Telemetry Configuration

At the moment you only see the LinkVario Configuration and the Blue-tooth Configuration . There will be more options with upcoming software updates

21.1.4.1. Vario Configuration

Tab on the vario configuration button and you will enter the LinkVario Setup. There are 2 different Varios available. [The standard and the DUO](#). The setup is separated in two topics:

1* Sound Configuration,

shows an overview about the vario sound behavior. Here you can set the vario-tone to your taste. For example you could set the climb-rate threshold according to the daily thermal strength, to do this just adjust the "fast tone type" climb-rate threshold according to a value which seems to be a reasonable thermal lift. So whenever you here the fast tone you know the climb-rate is above your adjusted value.

- First you see the live value of the height (AGL) and the climb-rate in the first row. This is only for your information.
- Value Adjustment, Now you can adjust the vario tone, from left to right the climb-rate can now be linked to a tone frequency. Normally a vario tone is a continuous low pitched sound as long as the climb-rate is negative. As soon as the climb-rate gets positive the tone changes to a high pitched beeping.
 - » The first row shows the values for the climb-rate in meter per seconds
 - » The second row indicates the frequency of the vario tone in Hz
 - » The bottom row is the tone type: silent, continuous, slow beeping or fast beeping
- We offer some recommended values, but of course this is totally personnel taste and you can adjust to your own needs:
 - » Recommended setup from WS-Tech - the tone should now be equal to the DV4 module.
http://www.weatronic.com/de/UserFiles/Media/Anleitungen_BAT/BAT_LinkVario.pdf

2* Sensors, is the setup and configuration option of all attached sensors to the LinkVario. You can attach one current sensor, one temperature sensor, one true airspeed sensor and one GPS sensor.

- Input, is the physical sensor plug at the LinkVario, some of these inputs have to configured, some not.
 - A = temperature [LINK](#)
 - B = speed [LINK](#)
 - C = power supply
 - CURRENT SENSOR [LINK](#)
- Item is the name the sensor or the calculated telemetry option, this is only for information
- Sensor, here you have to assign the
 - Current sensor (current sensor SM 20, SM 80, SM 150, SM 400) which is attached to the LinkVario.
 - Preset for the true airspeed sensor (max. 250km/h or max. 400km/h)
- Logging, setup the logging speed of the each value, choose the logging rate (0.1 / 0.2 / 0.5 / 1 / 2 / 4 / 5 / 10 Hz)

NOTICE

The GPS unit can be also attached to the LinkVario but it is only plug and play. Please consider that the GPS and the GPS-Pro module have different ways how to connect.

- The GPS-Pro is connected between RX and Vario. Please refer to the GPS - Pro Manual for more instructions.
<http://www.weatronic.com> -> [Download Overview](#) -> [Manuals](#) -> [weatronic 2.4 GPS Pro Module brief instructions](#)

- The old version uses a special 4-wire cable and connects directly to the LinkVario!



21.1.4.2. Blue-tooth Configuration

Here you can set your telemetry blue-tooth module for each model independently, on the top of the menu you see the check-box to activate the Blue-tooth and another check-box if you want to see the Pin. Also you see a tiny signal strength symbol on the right. You can set the Blue-tooth active and inactive for each model-memory separately. The setup is model-memory dependent.

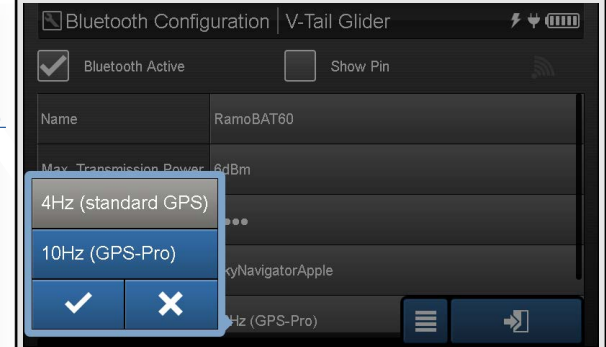
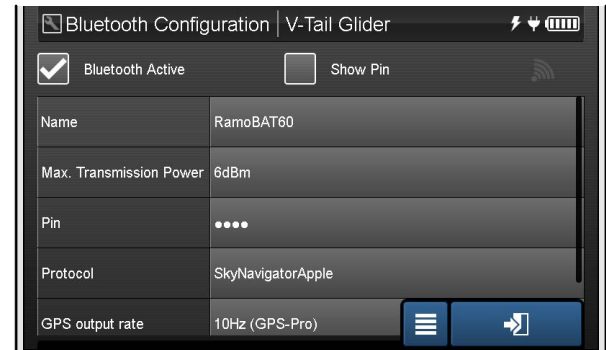
- **Name:** give it a name, we recommend to use the same name for all of your models. If you choose different names for your models some devices may require a fresh pairing to the radio. So first of all you have to remove the radio first from your "known" devices list and re-pair it.
- **Max. Transmission Power:** choose a value from low -20dBm to max. +12dBm. Possibly the telemetry back-channel could be influenced if the blue-tooth transmission power is set to higher output.
- **Pin:** choose a pin, this is needed for the Sky Navigator App. Make sure that you use the same PIN on the device and the BAT
- **Protocol:** select a protocol from the list. Some protocols will enable more options. Please refer to the corresponding application help for more information.
- **GPS output rate:** if you have selected the SkyNavigator protocol you can choose if you want to send the GPS data with 4 or 10 Hz. Please consider that only the GPS-Pro module is really capable of the 10Hz rate.

NOTICE

The blue-tooth is an optional feature but you can upgrade the blue-tooth chip by your own. Please read [„10.1 How to install the blue-tooth telemetry chip“ \(page 24\)](#) for detailed information.

21.1.4.3 MUX-Box Configuration

Since the transmitter software version 6.08 you can choose all MUX-Box telemetry data and assign them to your homescreen or telemetry screen. To set up the MUX-Box configuration you still have to use the GigaControl Software. Please read the MUX-Box specific instruction. [Link to download.](#)



21.1.5. Functions

This is the main menu to set up your model functions, read „20. weatronic programming philosophy“ (page 41) about the idea behind the weatronic programming philosophy. Here you see a screenshot of the menu on the right. All options are shortly explained. The next pages will give you very detailed information about each single one of them.

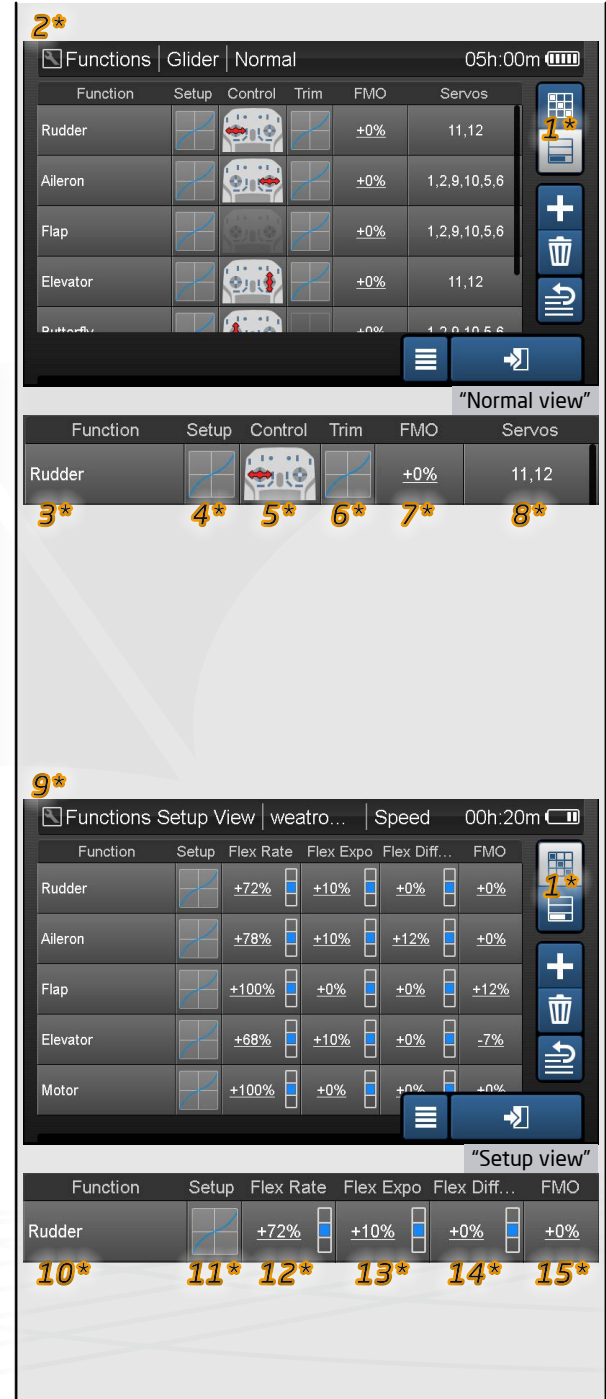
If you created your model with the “setup wizard” you will already see predefined functions with assigned controls and trim and also servos will be linked.

If you created a free model the list will be empty and you can now start to create functions to your needs and depending on the model itself. Use the PLUS to add a new function to the list.

NOTICE

If you once created a model memory with your own personal settings/Mixers/timers/and so on it makes absolutely sense to just copy this model memory and use it for another model. Please always consider that the amount of wing surfaces and the tail configuration is not changeable!

- 1*** The menu has a toggle button and you can alter between 2 different views.
- 2*** “Normal View”, here you see the standard “Function List” view. This menu let you create functions and assign controls and link servos to them.
- 3*** Function, you can rename all functions. If you add a new function it will be named “New Function” and a sequential number. Just tab on the name and use the keyboard to rename it.
- 4*** Setup, tab here and enter the “input” setup for this function. For example the “Flex Rate”. „21.1.5.1. Function Setup“ (page 54)
- 5*** Control, here you can select a control for the function. For example a switch or a stick axis. „21.1.5.2. Control Assignment“ (page 57)
- 6*** Trim, if you need to add a trim for the function tab here. „21.1.5.3. Trim Setup“ (page 57)
- 7*** FMO, is a shortcut for (Flight mode offset) „21.1.5.4. FMO (Flight mode offset)“ (page 58) . If you have created flight modes you can enter different values here for each flight-mode. „21.1.7. Flight Modes“ (page 61)
- 8*** Servos, each servo plug number which is linked to the function will be displayed here. Tab to enter the servo assignment menu. See „21.1.5.5. Servo Assignment“ (page 59)
- 9*** “Setup View”, here you see a overview about the most important flight-mode dependent setup options for a function. Whenever you have a lot of flight-modes and you also have a lot of functions which you want to adjust independently you could use this view. For example if you have 2 or even 3 aileron functions and you want to adjust the aileron differential. You see all of the values on 1 screen.
- 10*** Function, you can rename all functions. If you add a new function it will be named “New Function” and a sequential number. Just tab on the name and use the keyboard to rename it.
- 11*** Setup, tab here and enter the “input” setup for this function. For example the “Flex Rate”. „21.1.5.1. Function Setup“ (page 54)
- 12*** Flex Rate is shown just like in the function setup menu.
- 13*** Flex Expo is also shown just like in the function setup menu.
- 14*** Flex Diff... (Flex Differential) again just shown like in the function setup menu.
- 15*** “FMO” (Flight-Mode-Offset) is shown just like in the normal view.



21.1.5.1. Function Setup

The function setup menu contains many very important options like a overall rate reduction (called Flex Rate - former known as DUAL RATE) or the exponential option to make the center of a function very smooth. Each feature gets an own chapter and is explained detailed.

NOTICE

Each option which is underlined is flight-mode dependent. Another words you can adjust a different value for each flight-modes

21.1.5.1.1. Flex Rate

This is the former called DUAL RATE. From now on it is called FLEX RATE because you have the unique possibility to adjust it during flight seamless with a potentiometer, not like before with only 2 or 3 positions switches. For example you could assign a 2 pos. switch and choose between 100% and 70% which allows you to adjust the maximum throws in flight. If you assign a potentiometer you could change the value seamless during flight.

1* The value is a gain to the function;

- If 50% the function (the horizontal blue line at the graphic) will only move 50% when you move the control (the vertical blue line) 100%.
- If 100% the function will fully move linear according to the control movement.

2* Tab here and you will come to the menu where you could assign a control which will then affect the value for the Flex Rate.

3* If you assign a control please consider the small 3-state information graphic. It shows you the middle and the two end positions of your assigned control. Another words you can set different values for the Flex Rate at each of the 3 positions of your control.

21.1.5.1.2. Flex Expo

Here you can assign an exponential gain to the function. Which means that the function is very smooth around the center but still keeps the same maximum throws. Also you can assign a control to change the value.

For example you can assign a potentiometer and assign from 0% to 20% and test during flight which value suits your flight style the most.

4* The value is a exponential curve modification to the function;

- If 0% the function (the horizontal blue line) will move linear according to the movement of the control (the vertical blue line)
- If 100% the function will fully move with 100% exponential according to the control movement. The graphic will show the curve changes.

5* Tab here and you will come to the menu where you could assign a control which will then affect the value for the Flex Expo.

6* If you assign a control please consider the small 3-state information graphic. It shows you the middle and the two end positions of your assigned control. Another words you can set different values for the Flex Expo at each of the 3 positions of your control.

21.1.5.1.3. Flex Differential

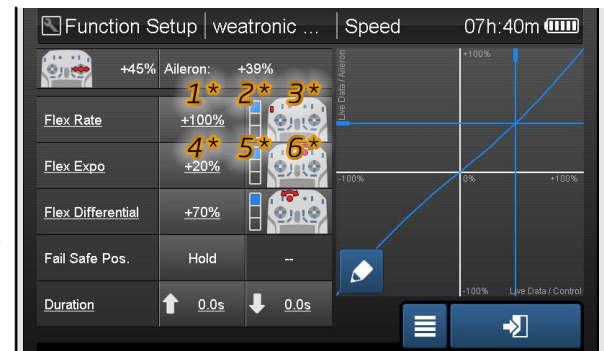
Here you can assign a differential for the function, also you could assign a control to change the value (only applies if there are L and R assigned servo to this function). If you created your model with the wizard your radio knows the position of the servo and it will assign the L(left) R(right) attribute automatically. For example you could assign a potentiometer and set a 50% value for one side and a 70% value for the other side of the potentiometer. This will give you the chance to adjust the differential perfectly in flight. Of course you always should consider that the initial differential value range suits your plane. After adjusting you just have to replace the control by the "Fixed Value" option. Just tab the control button again and select "Fixed value" from the drop-down menu at the control assignment screen.

7* The value is a exponential curve modification to the function;

- If 0% all "L" and "R" tagged servos will move identically for both sides. Mostly up and down as the differential option is mostly used for the Aileron function only.
- If 100% the downward movement will be 100% reduced. Another words the aileron will only move upward.

8* Tab here and you will come to the menu where you could assign a control which will then affect the value for the Flex Differential.

9* If you assign a control please consider the small 3-state information graphic. It shows you the middle and the two end positions of your assigned control. Another words you can set different values for the Flex Differential at each of the 3 positions of your control.



More upward movement



Less downward movement

21.1.5.1.4. Fail Safe Pos.

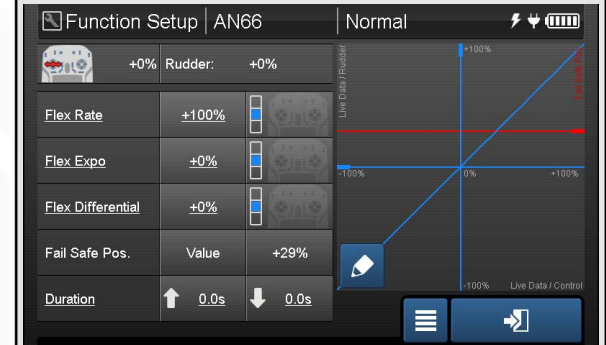
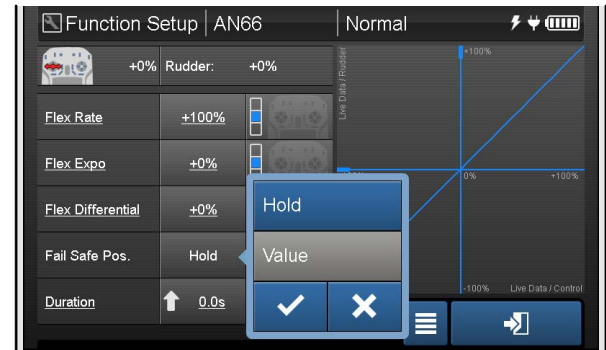
- This option is a very important safety feature. Please always make sure that your failsafe settings are perfectly adjusted! Never operate your model if the setting is not adjusted. Of course the right settings always depends at the type and kind of model.
- As a rule of thumb you could consider that all functions like motors or engines with blades or propellers should be adjusted to "OFF".
- Please consider to adjust a failsafe position which will at least try to stabilize your model and give it slowing down attitude.
- The "Failsafe Position" itself is stored inside the receiver and defines the routine whenever there is no valid transmission signal coming from the radio. The "hold" will keep the last transmitted position.
- Choose between a value or "hold", we strongly recommend to adjust a proper position for all functions. You will see the "value" as a red line at the right graphic.

NOTICE

Check the failsafe before each operation of your model! Go to general settings and make the Pre-Flight test, read „21.3.5. Pre-Flight Tests“ (page 79).

21.1.5.1.5. Duration

You can slow down the function for both directions separately in 0.1 second steps and up to max 20 seconds.



21.1.5.1.6. Curve Edit

Here you can edit the curve with 31 points, choose a preset curve and adjust global or non-global. The 31 points are marked as small gray dots on the curve. Then there are the black dots on the curve. These dots are marking the points which are fixed but which can be selected and moved. ONLY the red dots are the selected points which can be moved.

1* Mirror the complete curve by easily tab on the "Mirror Vertical" or "Mirror Horizontal" button.

2* Tab on the "Presets" button and choose on of the predefined curves.

3* Choose "Global" or "Non-Global" for this curve. The activated state is marked white.

- "Global": the curve is the same for all flight modes, this is the "default" setting
- "Non-Global": the curve is customizable for each flight mode separately

4* Add points (only gray dots):

- Move the cross-hair with the assigned control close to the gray dot which you want to select. Then press the "Add" button and the point is marked red.

5* Move points (all red points):

- You can only change the position of red marked points. Please consider that it doesn't matter where the control is located.
- Just tab on the coordinate plane to move the point roughly, now use the "plus" and "minus" button to make the fine adjustment.
- You can use also the "Numpad Rotary" ([21.3.6. Control Configuration](#) (page 80)) to change the position. Please note that if you assigned the rotary encoder as a trim or as a function input, you will change these values as well.

6* Select points (only black dots):

- Move the control above a black dot and press the "Select" button, now the dot will turn red.
- If there are no red dots you can press the "All" button and all black dots will be selected and turn red.
- If no point is selected you can select one by tabbing on it.

7* Unselect points (only red dots):

- Move the cross-hair above a red dot and you will see the "Unselect" button. Press it and the red dot will turn black.
- By pressing the "None" button all red dots will be deselected and will turn black.

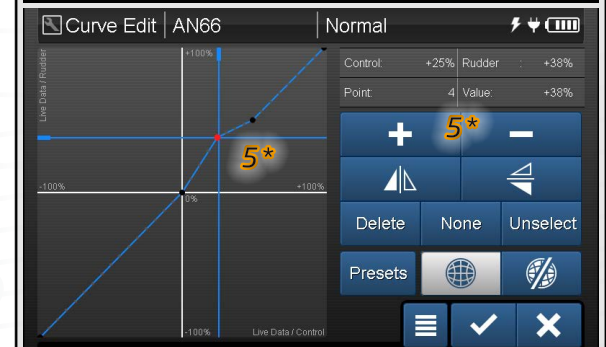
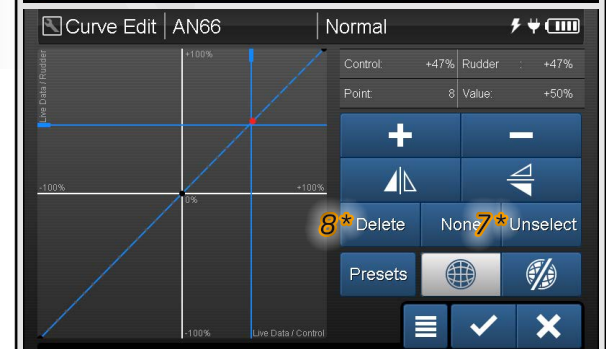
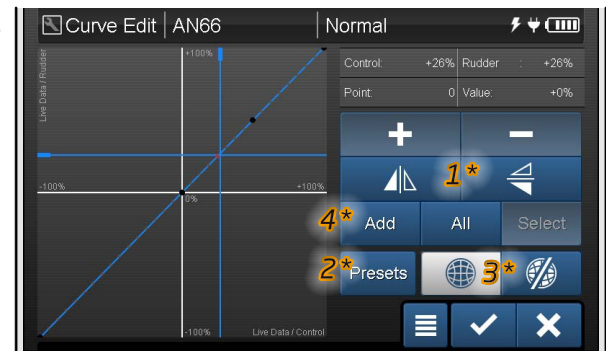
8* Delete points (only red dots):

- Move the cross-hair above a red dot and you will see the "Delete" button. Press it and the red dot turn gray.

NOTICE

Whenever you changed the curve you have to confirm by pressing the "check" button or also you can discard your adjustments by pressing the "cross" button. After this you will see the "leave page" button.

If you want to move more than one point simultaneously just mark each of them.



21.1.5.2. Control Assignment

Here you can assign a control for the function. This can be a stick axis, a potentiometer, a slider or a switch.

NOTICE

You will find this menu every time if you can assign a control to something like for example a value or like here as the function control input.

- When you enter the menu the assigned control is marked red. If there is no control assigned you will see the radio as an overview.
- Now just move the control which you want to assign or tab it on the screen. The control will be marked red.
- The last marked control when you leave the menu will be saved and is from now on moving the function.
- If you want to have no control selected just tab somewhere at the screen without tabbing a control. Now the red marked control will be deselected.
- There is also a drop-down menu with more options. Just tab the line and you will see all options.



Virtual Switch: to create virtual switches see „21.1.9. Virtual Switches“ (page 64)



Fixed Value: choose a value between -100% and +100% as a fixed input value for this function.



Control Extension: please refer to the teacher student menu for detailed information „21.1.12 Teacher Student“ (page 67)

NOTICE

Depending on the menu the drop-down option will be different. So for example if you are at the control assignment menu for the trim control you can only choose between a “normal control” or a “Fixed Value”.

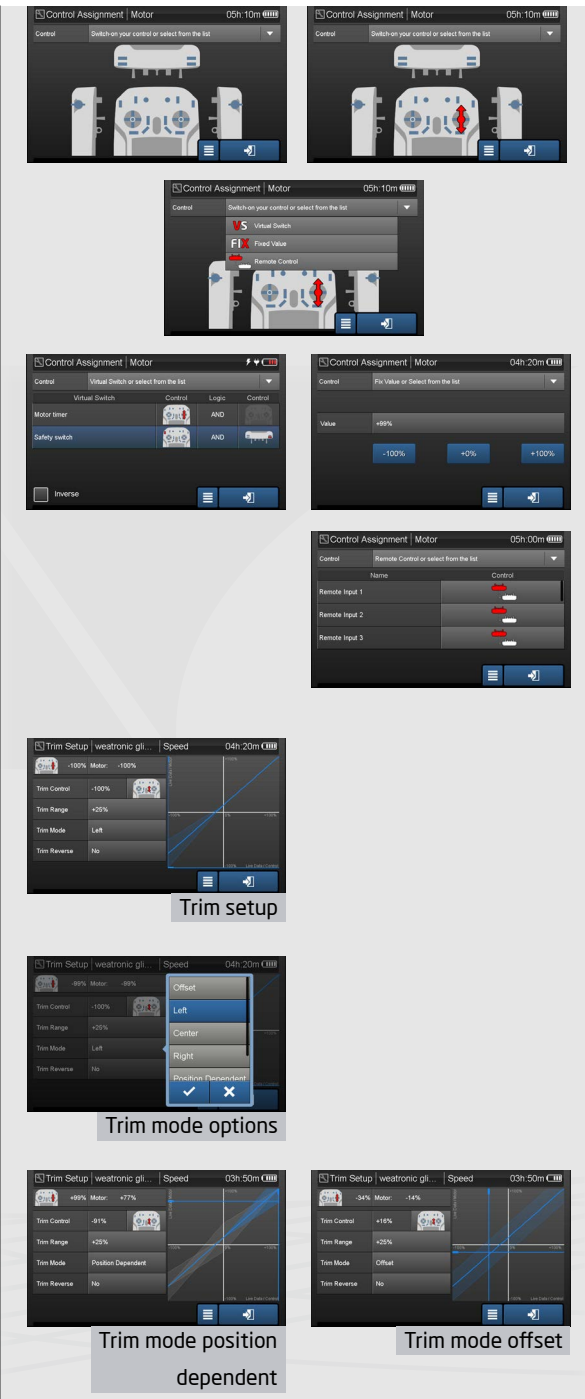
21.1.5.3. Trim Setup

Tab here and you will enter the Trim menu for this function. A trim will help you to fine adjust the function during operation of your model. Mostly the trim is used for the main function of a model. At an airplane it will be mostly used for the elevator, rudder, aileron and motor function. If you created your model with the setup wizard the trims will be already assigned automatically. Nevertheless, of course you could change the trim control to your personal taste. Please consider that you can reach the trim control easily during the operation of your model.

- Trim Control: live value and control assignment, tab the control button to change or assign a control.
- Trim Range: Adjust here the range which the trim should include, the range is also visualized in the graphic
- Trim Mode: Choose between offset, left, right, center or position depended. Check the graphic for information about the characteristics. The blue highlighted area is the current trim area.
- Trim Reverse: If you reversed the direction of the function by the function setup curve and not with the servo travel (21.1.5.5. Servo Assignment“ (page 59)), you have to reverse the trim as well!
- The graphic on the right shows the trim behavior and the range on base of the function curve.

NOTICE

If you want to have a motor trim which is also able to trim lower please change the function setup curve according to your adjusted trim range. So for example if you have a 25% trim range and you want to trim the left side, let’s assume this is idle for the motor (like the graphic) just put the most left(idle) setup curve point to -75%. Now you can trim from -100% to 50% for idle. Also you will see in the graphic that the blue shaded trim area starts exactly from the very bottom.



21.1.5.4. FMO (Flight mode offset)

You can adjust a FMO value for each flight mode separately. That means for example if you have a flap function you can use the offset to set the flaps to different deflection for each flight mode. Another words the FMO is a simple offset to the function, like if you want to move a function with a control to a certain position between -100% and +100%.

Mostly the flight modes are used for gliders and for different kind of flight behaviors regarding airspeed and which flight task. For example during thermal soaring and landing you want to have different aileron differential or different snap-flap deflection. The most common flight modes are the "thermal" and the "speed" mode. But for some glider specific competitions like for example the well know FAI class F3B some pilots have around 7 and even more flight-modes.

See [„21.1.7. Flight Modes“ \(page 61\)](#) for creating and adjusting flight modes. If you created at least 2 modes the actual flight mode name is displayed in the top information row.

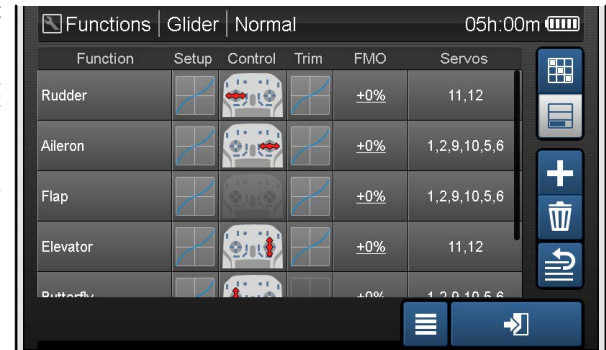
The flight mode "Normal" is the default mode.

NOTICE

All options and values which are underlined are "flight mode dependent"

NOTICE

If you want to have flight mode dependent trims please see [„14.7. Rotary Encoder Setup“ \(page 34\)](#). There you can set a rotary encoder to flight mode dependent.



Flight mode normal: Flap and Elevator have no offset



Flight mode Thermal: Flap and Elevator have a little offset

21.1.5.5. Servo Assignment

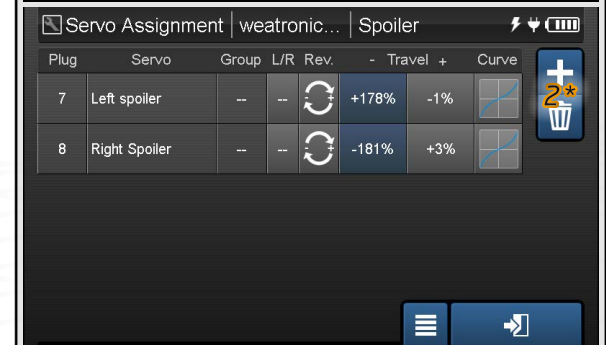
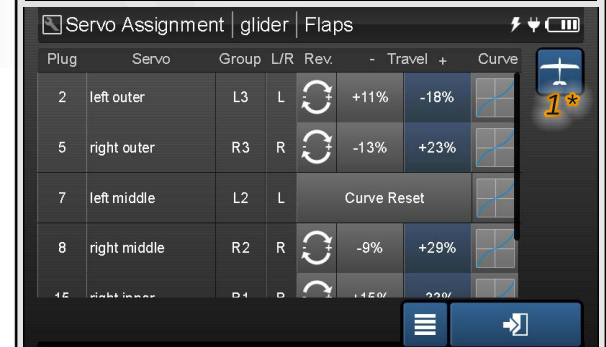
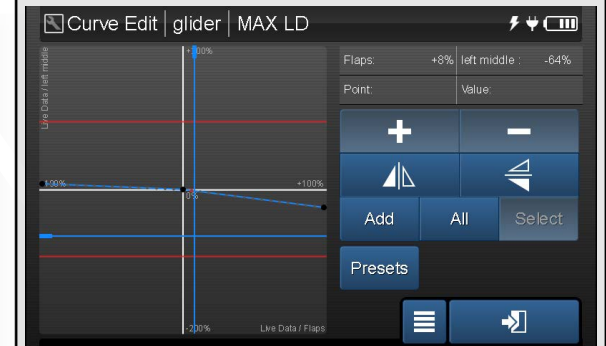
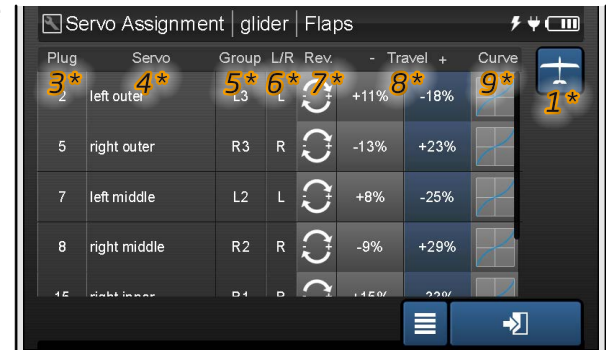
Here you assign all servos which should move to the function. You can set a simple - and + travel or you can also create a curve for the servo movement. There are 2 different kind of ways how to create functions and the servo assignment menu looks a little bit different according to this.

- 1*** The function is created by the setup wizard - and servos are assigned according to the servo configuration graphic view.
 - You will see the "Servo configuration graphic view button" on the right. So if you want to change the servo-plug you have to tab the button and change the plug at the graphic. When you will go back you will see that the new plug is assigned now.
- 2*** The function is created manually
 - You will see the common "Plus" and "Trash" button. So easily add the servo which should be linked to the function
- 3*** Plug, physical plug number at the receiver, only for information
- 4*** Servo, the servo name, only for information (go to servo adjustment menu for editing the name)
- 5*** (*) Group, please refer to [„21.1.3. Servo Configuration“ \(page 47\)](#). There you will find a very detailed information how to create and set up servo groups. Please consider that you can only assign Master servos to functions. Slave servos are not shown because their movement is only editable at the servo synchronization menu [„21.1.3.2 Servo Synchronization“ \(page 49\)](#)
- 6*** (*) L/R, information if the servo is on the left (L) or right (R) side of the model, this information is mostly needed for example for the differential for the aileron function. Please consider that the attribute is not editable if you used the graphic view, because the attribute is set automatically. Please also consider that each servo plug can only have left or right or no attribute. If you have assigned a servo to more than one function and you change the L/R attribute at one of them, it will be also changed at all of them
- 7*** Rev., use the Rev. (Reverse) button to easy interchange the - and + travel. Another words if the servo moves wrong you can reverse its direction here.
- 8*** -Travel+, here you can adjust the 2 end point values for only this servo and only for this designated function. The active side is blue shaded.

NOTICE

The normal "-Travel+" is deactivated as soon as you set up a curve. So the Travel values are not longer active and you will see the button "Curve Reset" instead. By tabbing it, you will delete the curve and the 2 end point values can be adjusted again. The last known value will be restored.

- 9*** Curve, here you can adjust a 33 points curve for each servo. Please see [„21.1.5.1.6. Curve Edit“ \(page 56\)](#). There you will get detailed information how to manipulate a curve. Please consider that the graph shows the servo value from -200% to +200% and the two red horizontal lines are the servo limits. The adjusted "-Travel+" values will be used as the 2 end points for the curve if you go to the curve menu the first time.



21.1.6. Function Mixers

Whenever you want to move a function in relation to another function, press the plus symbol to add a new function mixer. Go to the Setup to adjust and configure the mixer.

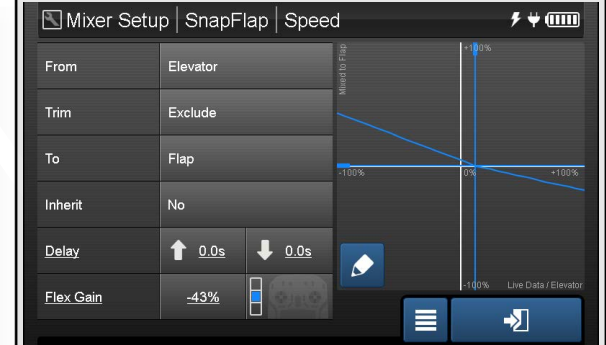
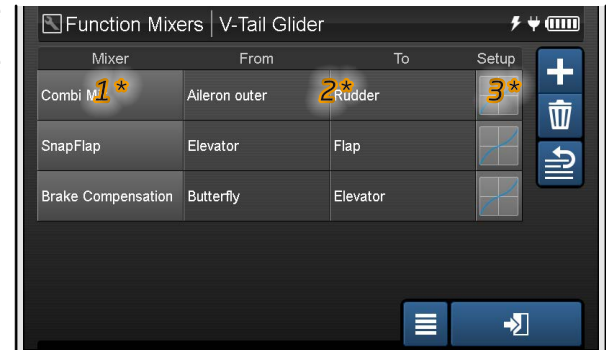
If you created your model with the setup wizard you will already see some predefined function mixers. For example the "Brake Compensation" which is the compensation of the elevator to the butterfly function. Here you have to adjust depending on your model a little down elevator in order to keep the glide leveled when you pull the brakes.

- 1*** Mixer the mixer name, tab and name it.
- 2*** From / To see the "From"(input) function and "To"(output) function information. Tab the setup to edit or assign functions.
- 3*** Setup Mixer setup:
 - "From" function, the function which is the "input". Just tab the field and select a function from the pop-up.
 - "Trim", exclude or include the trim , if there is a trim assigned to the "input function" and you include the trim it will also effect the output function.
 - "To" function, the function which should be effected by the "input". Just tab the field and select a function from the pop-up.
 - "Inherit", yes or no, if activated: the "to function" ratio will also be effective to all other functions mixers where this "to function" is a "from function".

NOTICE

Be aware that circular relations and unforeseen movements can be caused, so please use the "Inherit" option only if needed. Rather try to make a new mixer.

- Delay, in 0.1 seconds steps for both directions
- Flex Gain, here you adjusting the actual "mix ratio" value in percentage; we call this option flex gain because you can assign a control to this value and adjust the value "IN FLIGHT" seamless. So for example you can add a slider to the Brake Compensation Mixer (Butterfly - Elevator) and adjust a value from +/- 25% according to the recommended deflection for your model. And then you can adjust the gain during flight and set it up just perfectly to your personal taste. After this you can replace the assigned control by the Fix Value and your "proofed in-flight" value will be stored
- Curve Edit, after you created a specific curve the "Flex gain" value will acts like a reduce gain to this curve. So if the flex gain value is 100% the curve will be like adjusted. But if the gain is 0% there will be no mixing output anymore.



21.1.7. Flight Modes

Flight modes are useful whenever you want to change the overall adjustments of the model in relation to different situation during operation. For example at a glider you can perfectly set up your flap positions, lex rates and the aileron differential according for each flight mode like thermal or speed. Or another example would be the multiple use of controls, like at the one flightmode you use the left stick for the boat and at the other flightmode you use the same control to steer the crane at the boat.

- On the right you see the common symbols for adding, deleting and rearranging the list.
- Then you see the “Copy Flight Mode” Button, tab it and select the flight mode which you want to copy and give it a new name. All flight-mode dependent values will be copied to the new mode.
- The blue shaded mode is active.

NOTICE

There are many values and options which are flight mode “depended -> non-global” or “not depended -> global”, often you can even choose. Consider the top information row as kind of indication: normally there are some options in this menu if the Flight Mode is displayed. ALSO the options/values are underlined if they are flight-mode dependent.

- Name, Flight Mode Name, tap to edit.
- Fade in, the time is adjustable in 0.1 seconds steps to fade into the flight mode, in order to get a smooth transition.
- Functions with no Fade in, choose all functions which should be excluded by the smooth transition.
- Flight mode assignment, here you can adjust the switches and the combinations, which you want to use to change between the different flight-modes. Tab the button and you will see the assignment menu. There are 5 master switches and 3 combination switches. This gives you the chance to create 8 flight modes if each of them will have an own switch position. If you start to use the combinations then you can get up to 13 different flight modes.

The blue shaded line is the active one. Only one line can be active.

The logic is build from the top to the bottom. The line will always be at the most upper line which has a closed “state”. If this state gets open the line will “drop” down to the next closed state.

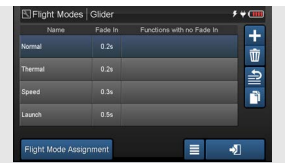
Now you can assign switches (or even more options from the drop-down menu, please refer to the next [„21.1.7.1 Switch assignment” \(page 62\)](#)) to each line and control the state of this line. Finally you can choose a flight mode for each line.

This works for all 5 master lines but as soon as the the combination line is active the priority works a little bit different. Again you can assign a switch for each of the 3 Combinations. Now you have to consider the graphic and the white marked line. The white line will always follows the way down to one of the 8 circles. Each of the circles can get linked to a flight mode. Now you can use the 3 combination switches to reach each of the circles. On the right you always see only the current assigned flight mode. So if you want to assign a flight mode you have to use the switches to reach the specific circle and then tab on the field and choose one for the selection pop-up.

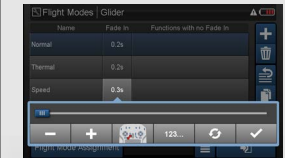
- Switch, tab and assign the switch also there is a visual indication for the “ON” position of the assigned switch. There are 3 fields at this little graphic and the filled ones are marking the “ON” state.
- State, check the actual state of the line (only for your information)
- Combination graphic, there is a maximum of 13 combinations (each of the 13 small circles are representing one combination), if the circle is “empty” the “normal” flight mode is assigned. If it is filled there is a flight mode assigned. The thicker white path leads to the active blue-shaded line.
- Flight Mode, just click on the field and choose the flight mode from the pop-up. Please consider that the combination line only shows the currently selected mode.



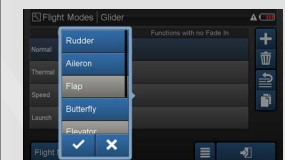
In the beginning there is only the normal mode



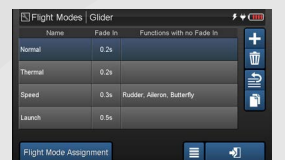
Press the “Plus” symbol to add flight modes



Adjust a time for the transition



Select function without transition time



Now you can go to the assignment menu



As default all switches are closed



Tab the switch field and select a switch position



Master A is open and Master B is highest priority



Select flight modes from the pop-up



Now all flight modes can be chosen by a switch


21.1.7.1 Switch assignment

The switch assignment is more or less similar to the control assignment. But you can only decide for switches and a specific position of the switch. You will find the switch assignment menu also somewhere else, for example at the sequencer menu or the voice and sound menu. Please consider that the drop-down menu offers different options at each menu.

21.1.7.1.1 General assignment

Some general information about the switch assignment menu

- ☞ The last marked switch position when you leave the menu will be saved.
- ☞ If you want to have no switch selected just use the fixed switch option from the drop-down menu. If you select the "OFF" state the switch is so to say permanent deactivated.
- ☞ There is also a drop-down menu with more options. Just tab the top line and you will see all options. Some off the menus only offer some of the options.
 - Switch assignment: If you now move a switch you will see that this switch will be marked red in the graphic and besides the switch you will see a small 3-field graphic. This little 3-field graphic shows you which position of the switch was selected, the active fields will be shaded blue. This is also depending on the physical kind of switch which you moved.
 - » 2-Position, If you use a 2-position switch of course you will only be able to use either the "lower+middle" or the "upper+middle" position
 - » 3-Position, If you have a 3 position switch you can select one of 5 possible options. The single fields will be activated when you switch slowly. Whenever you switch quick from lower to middle and again quick to the upper position you will see that the middle and the upper position is marked blue.

click _ wait _ click _ wait _ click -> selecting single fields 

click _ click -> select two fields 

As a example for the two fields you can think about that want to have a sound mode activated at the middle AND the upper position of a 3 position switch.

- Virtual switches: to create virtual switches see „21.1.9. Virtual Switches“ (page 62). Use the "Inverse" check-box if the virtual switch is reversed.
- Fixed Switch: Choose either if the state of the switch should be permanent opened "OFF" or closed "ON".
- Flight Mode Switch: Choose the flight mode which should act as the "ON" state. Use the "Inverse" button if you want have the "OFF" state instead.
- Remote Switch: Please read „21.1.12 Teacher Student“ (page 62) for detailed information about how to use the control extension option.

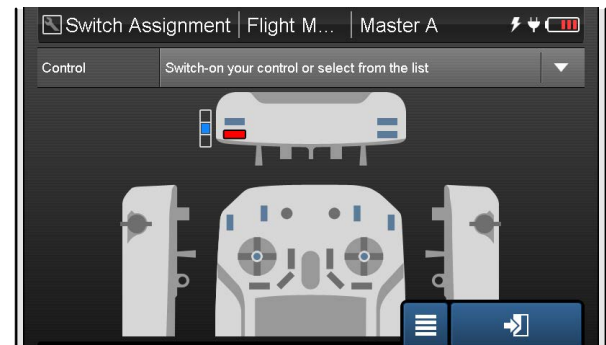
21.1.7.1.2 Flight mode specific assignment

Here at the flight mode menu you can assign a switch to activate the corresponding flight mode.

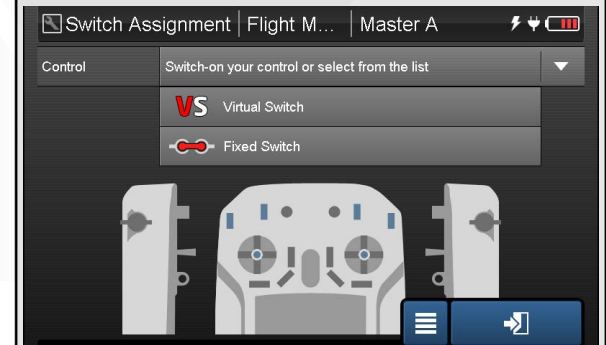
1. When you enter the assignment menu the first time you will see the "Closed Fixed Switch" - "ON" option activated.
2. Now tab on the drop down menu and select the option which you want to choose to activate the flight mode line.
3. Normally you will use a physical switch at your radio. So please tab the line with "Control selection via switching".
4. Then you will see the radio graphic and if you now move a switch you will see that this switch will be marked red in the graphic and besides the switch you will see a small 3-field graphic. This little 3-field graphic shows you which position of the switch was selected, the active fields will be shaded blue. This is also depending on the physical kind of switch which you moved.
 - > 2-Position, If you use a 2-position switch of course you will only be able to use either the "lower+middle" or the "upper+middle" position
 - > 3-Position, If you have a 3 position switch you can select one of 5 possible options.
 - click _ wait _ click _ wait _ click -> selecting single fields
 - click _ click -> select two fields
5. Please consider that the state will be stored when you leave the menu, so for example if you want to select a momentary switch please hold the switch at the position and leave the menu. Otherwise it will just store the other position of the switch.

NOTICE

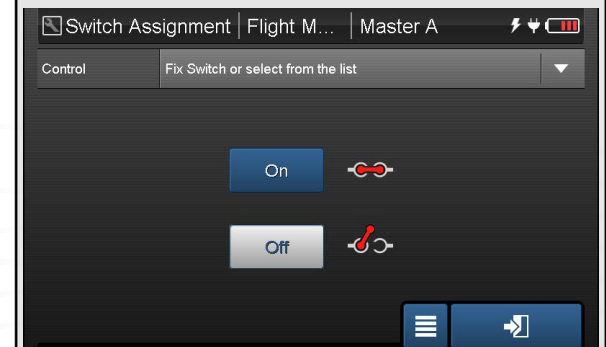
Depending on the menu the drop-down option will be different. So for example the trim control can only be a "normal control" or a "Fixed Value".



If you trigger a switch it will get marked red and the selected position is marked blue. This position is stored when you leave the menu.



Tab on the upper line and you will see all possible options at the drop-down menu.



Here you see the fixed switch option.

21.1.8. Sequencers

Press the plus symbol to add a new sequencer. A Sequencer can control up to 5 Servos. Please note that all servos which are assigned to a sequencer are not available for any other function. In addition all servos which are assigned to function are not available for the sequencer. The sequencer information is stored inside the receiver - for maximum safety.

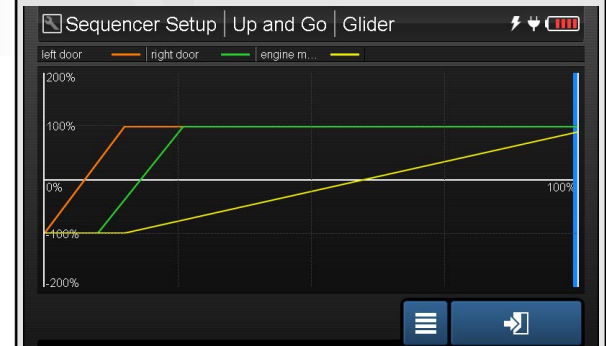
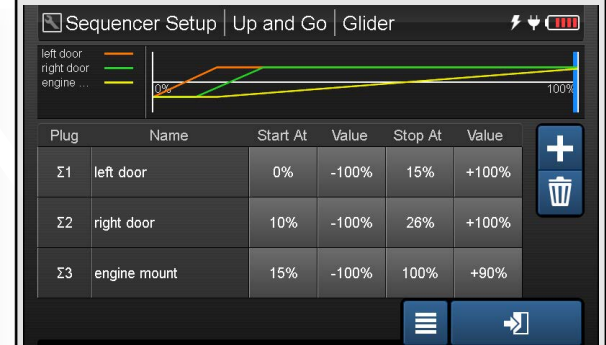
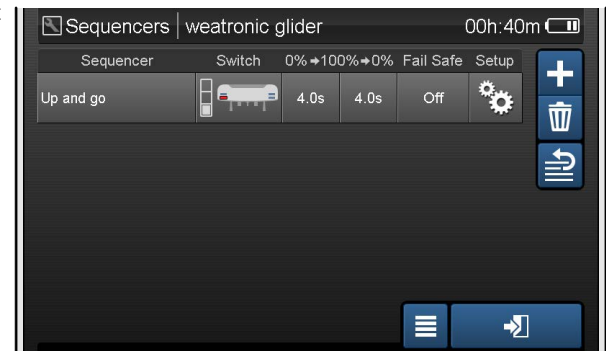
- Sequencer, the sequencer name, tab and name it.
- Switch, tab here and choose the switch at the switch assignment menu to start the sequence.
- 0% -> 100% here you can choose a time in seconds, which is the time for the start (0%) of the complete sequence to the end (100%)
- 100% -> 0% here you adjust the time in seconds, which is the reverse time so to say, from the end back to the start.
- Fail Safe, here you can decide between OFF, HOLD and VALUE for the case if the receiver is not getting any valid signal from the radio and the Fail Safe position is applied.
 - OFF, if the sequencer is in progress and the Failsafe is activated, the sequencer will move on.
 - HOLD, if the sequencer is in progress and the Failsafe is activated, it will stop and will hold the position.
 - VALUE, as soon as the Failsafe is activated the sequencer will move to the assigned value (0% - 100%)
- Setup, the sequencer setup, here you can assign and adjust the movement of the servos. On the top of the menu you see a small graphic (a tab on the graphic will give you a zoom view) which shows the sequence and all assigned servo movements. Left is the start(equals 0%) and on the right is the end(equals 100%). Also you see the blue bar which shows the actual process position, if the receiver is connected.
 - PLUS/TRASH button Press the "PLUS" button to add a servo, you can assign the same Servo up to 10 times, which let you add more "points" to the servo "curve". Use the "Trash" button if you want to delete created line again.
 - Plug, the physical plug number at the main or sub receiver.
 - Sequencer, the name of the Servo. You can go to the "Servo Configuration" menu to edit the name, center and the limits of this servo.
 - Start at, define the start-percentage(time) for the first "point"
 - Value, select the value(servo-position) for the first "point".
 - Stop at, define the end-percentage(time) for the second "point".
 - Value, select the value(servo-position) for the second "point".

NOTICE

Servos which are assigned via the graphic view can NOT be selected as a sequencer servo.

Servos which are assigned to a sequencer can not be used for anything else.

If you assign a servo twice or more, the "Stop" value of the servo can not be smaller than the "Start" value for the next assignment.



21.1.9. Virtual Switches

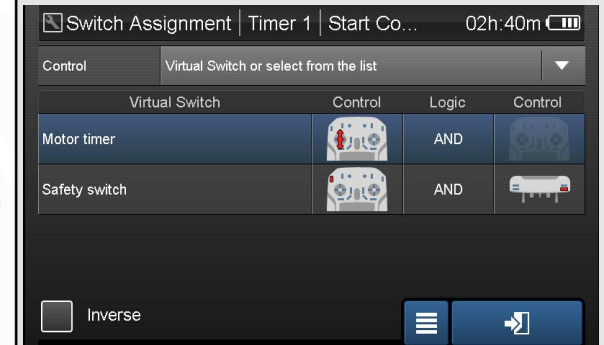
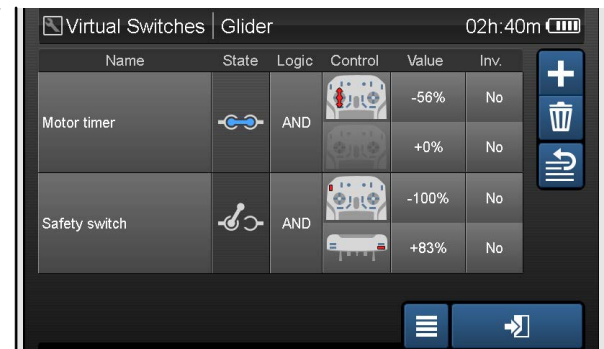
This option gives you the possibility to create a switch which is activated by 1 or 2 controls. For example if you want to have a motor runtime countdown timer and you want to start the timer whenever you have more than 30% throttle. Here you can create such a "virtual" switch with your own thresholds and logics. Then you could use this virtual switch at the timer menu and start the countdown.

Press on plus to add a new virtual switch, or use the "Trash" symbol to delete one.

- Name, give a specific name to each of the virtual switches
- State, check the "open" or "closed" state of the virtual switch. Use this to control your settings live.
- Logic, change the logic between
 - AND, both control condition must be fulfilled to close the switch
 - OR, even 1 condition is enough to close the switch
- Control, tab and choose 1 or 2 controls which should be involved. The position (as soon as you leave the control assignment menu) of the control will be automatically applied as the threshold value for this control.
- Value, adjust and change the threshold value for each of the controls.
- Inv. , (Inverse) you can reverse the control input. Which means for the trigger condition either YES the threshold is reached or NO it is not yet reached.

NOTICE

Now you can find the virtual switch under the drop-down menu at some „control assignment“ or “switch assignment“ menu screens. Please consider that you have to option to inverse a virtual switch at this selection menu, so you do not have to create a opposite virtual switch.



21.1.10. Timers

This menu let you create all kind of timers, like for example normal stopwatches, flight timers, motor run timer or countdown timers. You can assign a separate control to start to stop and to reset your timers. Timers are model dependent so each of your model can have its own timers. To add a new timer just use the common "plus" button. And like always you can delete timers if you tab the "Trash" button.

- Name, tab and edit the name of the timer
- Value, current live value, only for information
- Setup, the timer setup,
 - Current Value, for your information
 - Start Control, as default there is a fixed closed switch assign, tab this switch symbol and assign a switch at the switch assignment menu, use the drop-down menu to see all options which can be used as a switch option. Furthermore you see the actual caused state of the switch displayed.

NOTICE

Please remember that the switch position will be stored right at the moment when you leave the Switch Assignment menu.

- Stop Control, same like the Start Control
- Reset Control, same like the Start Control, but also you see a symbol which let you reset the timer by tabbing it. For example if you created a normal "model in use timer" which actually has only fixed switches as controls and you want to reset this timer you could do it here.

NOTICE

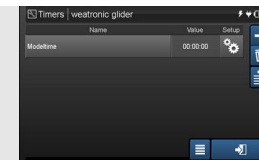
If the reset control is closed the timer can not run. So you should use a momentary toggle switch for the reset control.

- Start Time, adjust the start time for timer, if it is zero the timer will count up.
- Alarm End, adjust a time where the alarm should end. So if the timer should count up you can set the end of the timer here.
- Alarm Duration, choose the duration for the automatic alarm which is causing the set alarm types.
- Alarm Type, set the Alarm Type, beep, vibration and voice is available. Depending on the alarm duration the alarms will be triggered. Check the table, if the voice is activated it will just announce the time at each event.

Triggered event at Second	120	105	90	75	60	55	50	45	40	35	30	25	20	18	16	14	12	10	9	8	7	6	5	4	3	2	1	0	
Vibration (normal and short)	—	—	—	—	—	—	—	—	—	—	---	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Beep (low and high)	—	—	—	—	—	—	—	—	—	—	^^^	—	^^	—	—	—	—	<	—	—	—	—	<	<	<	<	<	<	}

NOTICE

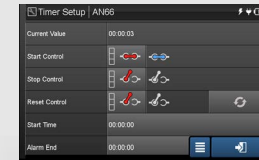
After creating a timer you can find this timer at the telemetry data assignment menu and now you can assign it to your home screen at the Screen Adjustment menu.



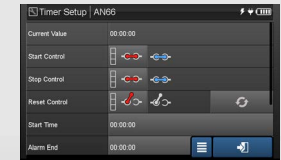
Press "Plus" to add a timer



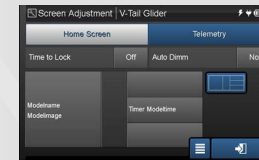
Set a specific timer name



Select controls at the setup



Adjust start time, alarm end, and so on...



Go to screen adjustment and assign the timer



Now you see it at the home screen

21.1.11. Limiter

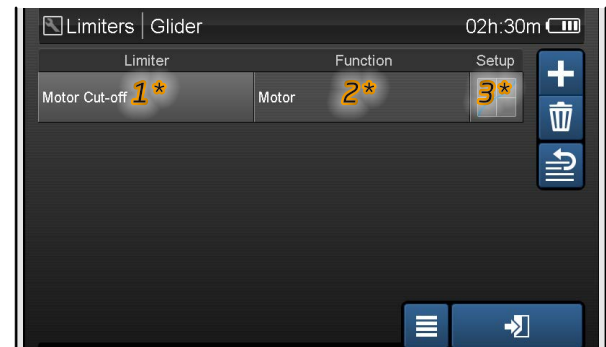
Here you can limit functions - as always press plus to add a new limiter. Mostly this option is used for safety reasons, for example to limit the motor function with one safety switch.

The Limiter will create a "red" area which the function will never reach! So for example if you set a limit from below to 15% you will see a red shaded area from bottom up. So now the function value can never go underneath this value.

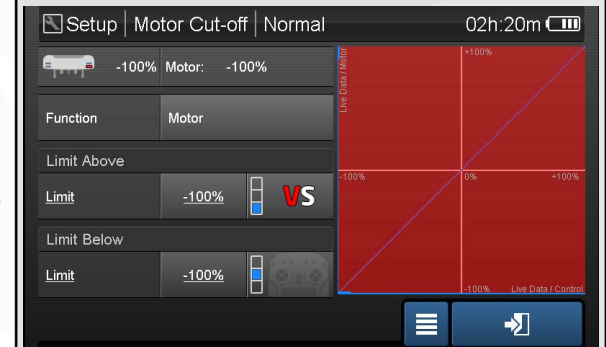
- 1* Limiter, the limiter name, tab to edit and rename it
- 2* Function, here you see the affected function, to adjust this you have to go to the setup of the limiter.
 - Also the graphic shows you the setup curve of the selected function.
- 3* Setup, the limiter setup, go here to adjust the limiter
 - Check the live value of the control on the left and the function value itself on the right.
 - Function, tab here and choose the function which you want to limit
 - Limit Above, adjust the value and/or choose a control to change the Limit value from above. As soon as are adjusting a value you will see a red shaded area from the top until the threshold value. Now the function value can not be beyond it. So for example if you assign a safety toggle switch as a control, you can now limit the motor function to -100% which disables the function so to say.
 - Limit Below, adjust the value and/or choose a control to change the Limit value from below. As soon as are adjusting a value you will see a red shaded area from the bottom until the threshold value. Now the function value can not be below it. So for example you could use this to disable the butterfly function if you switch on your motor.

NOTICE

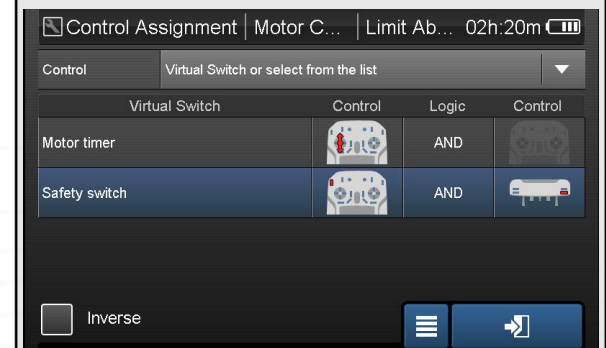
Please be aware that the Limiter value is flight-mode dependent! So whenever you set a limiter and you are using flight modes please double-check the Limiter at each of the flight modes separately.



Tab the "Plus" symbol and name the Limiter, now tab the setup symbol too configure it.



Here you can select the function which should be limited, here at the example it is the Motor function. Also you see that a "Virtual Switch" is already assign to the Limit from Above. The red shaded area is from top to -100%.



Here you see the "Control Assignment" screen where the virtual switch is already selected.

21.1.12 Teacher Student

Since the Software version 6.08 the BAT radio software offers a sophisticate teacher-student menu. This feature offers you the possibility to control a model with 2 radios.

- ✦ The connection between the radios is established via a standard 3.5mm stereo-phone jack (TRS connector):



- ✦ Check „5. General overview“ (page 11) about the location of the PPM jack.
- ✦ Pilot / Operator Mode only works between two BAT 6x radios.
- ✦ Teacher / Student Mode works with one BAT 6x radio and any other transmitter which offers a PPM signal output/input
- ✦ Student and Operator mode will switch the 2.4GHz output OFF
- ✦ The menu offers 6 different kind of “modes” which you can choose.

1* PPM off, this is the default mode. No Signal at the PPM jack at the radio.

2* PPM on, If activated the 3.5mm PPM port will give a common PPM signal (12 channels), which you could use for example for flight simulators.

- Settings**
- > Assign a separate control to each of the 12 “output channels”
 - > You can toggle to second view to get a quick overview of all output channels

3* Teacher, now you can use any other radio which gives a proper PPM signal as a student radio.

- > First choose a control which will “activate” the overruling of the “input channels”. If no proper PPM signal is detected the teacher controls are automatically activated.

- Settings**
- > Assign the control which will be replaced by the “input channels”.
 - > If needed you can reverse a “input channel”, Check the blue bar for information.
 - > Press “Start Calibration” to perform a calibration. The Student transmitter must be connected. The input of each channel is set to 0% for center and to 100% for maximum input value. Follow the instructions on the screen to perform a calibration.
 - > You can toggle to second view to get a quick overview of all channels

4* Student, the BAT radio will turn off the 2.4Ghz and will give the common PPM signal at the 3.5mm PPM jack

- Settings**
- > Assign a control to each of the 12 “output channels”.
 - > You can toggle to second view to get a quick overview of all output channels

5* Pilot, This mode is only made for communication between two BAT radios, so it requires another BAT radio at operator mode.

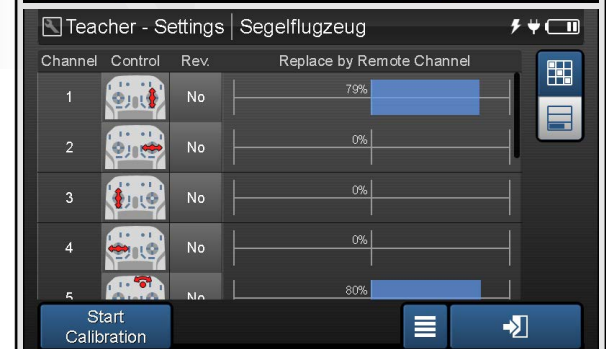
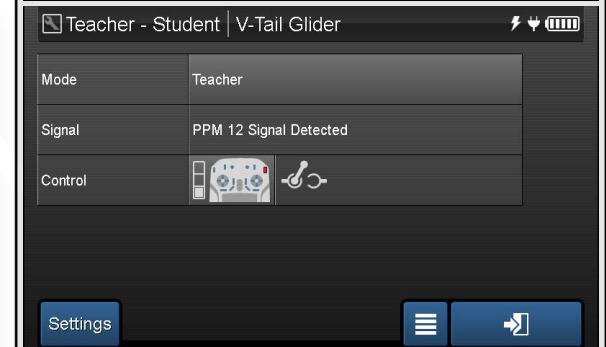
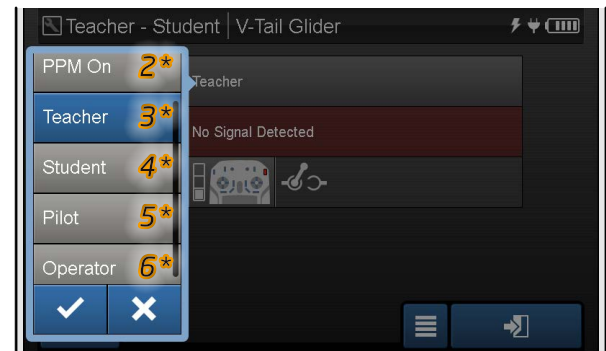
- > Choose a control which will “Enable” or “Disable” the additional remote controls of the “operator radio”. If no proper digital signal is detected the backup controls are automatically activated.

- Settings**
- > Assign a control which will be the backup for the “additional controls/channels”. Use fix values as a failsafe position.
 - > If needed you can reverse a “Additional remote channel”, Check the blue bar for information.
 - > You can toggle to second view to get a quick overview of all remote channels

- > Functions can now be controlled by the “Additional remote channels”. You will find the “Remote Input” 1 to 12 at the common “Control Assignment”.

6* Operator, This mode is only made for communication between two BAT radios, so it requires another BAT radio at pilot mode.

- Settings**
- > Assign a control to each of the 12 “remote channels”.
 - > You can toggle to second view to get a quick overview of all remote channels



21.1.13. Screen Adjustment (home and telemetry screens)

This menu let you create and/or customize your home and telemetry screens. Then after creating and adjusting you can swipe left or right at the „home screen“ to change between the screens. Meanwhile you could also use the special Telemetry Screen Switch to switch screens. Also the minimum and maximum values are meanwhile available. At the telemetry screens the max and min values are shown underneath each telemetry data (Please see „14.1 Home-screen (Telemetry Screens)“ (page 29)) for some more information.

1* Home Screen,

here you can customize your home-screen and select different layouts,

2* Time to lock

select the time until the touchscreen will be automatically locked, this countdown only applies at the home screen. If you enabled “Auto dim” the screen will also be switched off. PLEASE NOTE: the lock symbol at the Top Info Row indicates if the screen is locked.

3* Auto dim

the possibility to switch off the LCD screen back-light IF the screen is locked!

4* Telemetry container,

tap on the boxes and choose what kind of telemetry data you want to link to the field. The linked telemetry data name will be written at the field. See also point 10 below.

5* Field layout presets,

press and choose one of the layouts. There are 3 different ones available for the home-screen.

6* Telemetry.

here you can add telemetry screens which you can see by swiping left or right at your home-screen. Also since Software version 6.08 you could use the Telemetry Screen Switch to alter between the screens. „21.3.6. Control Configuration“ (page 80)

7* Adding and removing,

press plus to add up to 8 telemetry screens, if you want to delete a screen tab the “Trash” symbol

8* Selection bar,

here you can select the telemetry screen which you want to modify. The white shaded one is the active one.

9* Field layout presets,

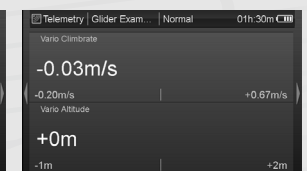
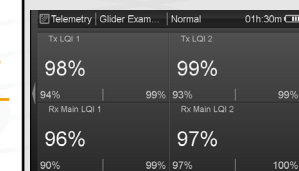
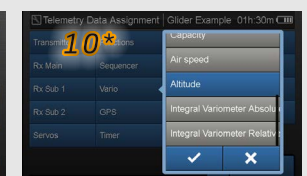
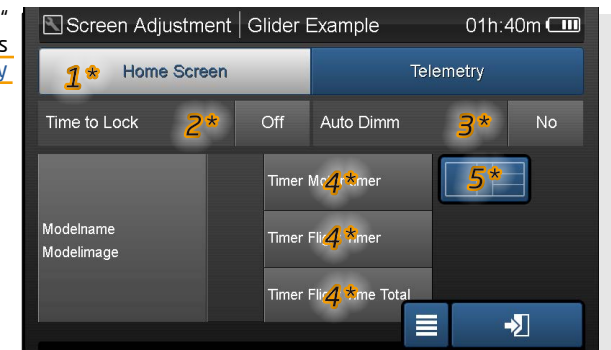
choose the layout of the selected telemetry screen. There are 10 different layouts available.

- The first 8 ones are offering different amounts and arrangements of telemetry data.
- And the C marked layout is a fully customizable HTML based telemetry screen, this function is not made for common use. Mostly it is used for special applications, like for example drone applications. Please contact our service if you have any questions.

10* Telemetry data assignment,

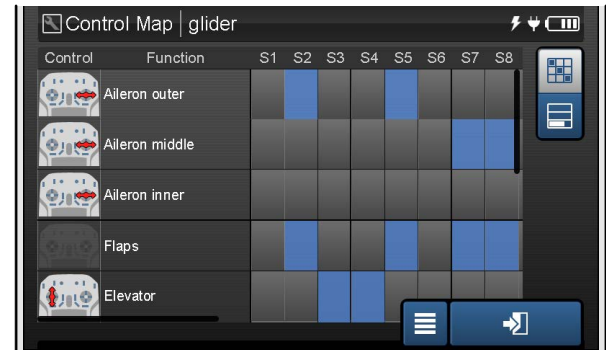
tab on one of the empty gray containers and choose a specific telemetry data from the telemetry data assignment menu. When you want to change to another value just tab again and select the new one. If you want to remove one please just go to the menu and select nothing and leave the menu again.

11* Now you will see your adjusted data at the homescreen and at the telemetry screens. Swipe left or right at the display to change between the screens. Or use the telemetry screens switch. Please see „21.3.6. Control Configuration“ (page 80) how to adjust this special switch. Each telemetry field is also storing the minimum and maximum values. If you tab them you will be able to reset them.




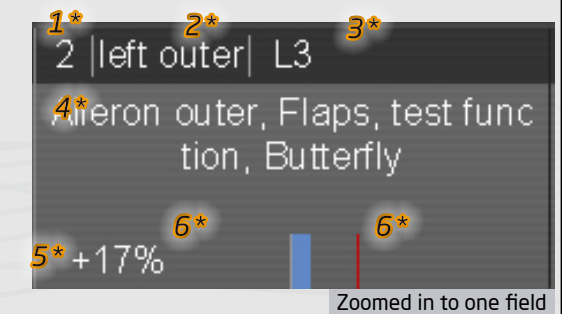
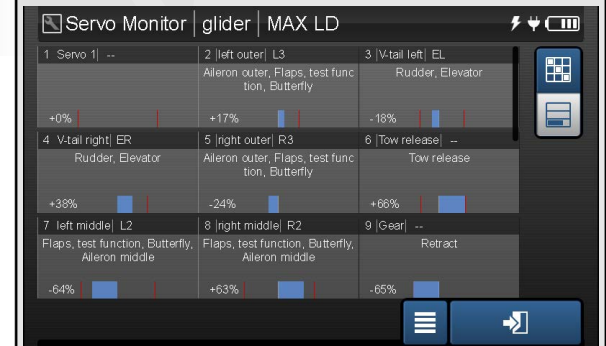
21.1.14. Control Map

- The control map is a matrix which shows each servo and each function and like they are related to each other.
- The single rows are showing the function list and their assigned controls.
- The columns are representing the physical servo plugs at the receiver.
- Then each blue shaded field shows if the servo is assigned to the function or sequencer.
- You can scroll down and/or right to see more functions and servos.
- Also the sequencer are shown at the end of the list.



21.1.15. Servo Monitor

- Live view of each servo position. The blue bar is moving and shows the live servo position.
- Each Servo has a field with some information:
 - 1* First you see the physical plug number
 - 2* Then the Name of the Servo is displayed
 - 3* Also the Group Index is shown
 - 4* After this all functions are listed which the servo is assigned to
 - 5* The bottom shows the actual position of the Servo as a blue bar, at the left the actual value is shown.
 - 6* The 2 red lines at the position bar are representing the 2 adjusted limits of the servo
- This symbol  always provides a shortcut to the Servo Monitor.



Zoomed in to one field

21.1.16. Voice & Sounds

The Voice & Sounds menu provides you the opportunity to set each telemetry value as a frequent announcement or a warning. You can create up to 16 different sound modes. Each of this sound-mode can contain several telemetry items and warnings. Multiple mode activation is also possible. Press the plus to add a new mode. Or tab the trash symbol to delete some.

- Mode, tab and edit the name of the mode.
- File, tab here and you will see a pop-up. Choose the ".wav" and check and you will enter a selection screen. There you can choose your own wave audio file by DOUBLECLICK. This sound will be played first when the sound mode is activated.

NOTICE

You have to copy (use the file browser to do this) your wave files to the internal "Audio" folder of the BAT radio before you can select them here. All common kind of wave files (*.wav) can be used. Please make sure that the file name only consist of standard letters, like A-Z and a-z. Please avoid special characters.

- Vario, choose if you want to hear a vario tone at this sound mode. Only applicable if there is really a LinkVario attached.
- Switch, tab and assign a switch to activate the mode. See „21.1.7.1 Switch assignment“ (page 62) for detailed information about the switch assignment. Here at the voice and sound menu you have a lot of option from the dropdown menu, like the "Flight-Mode Switch".
- Setup, there are 2 different kind of setups:



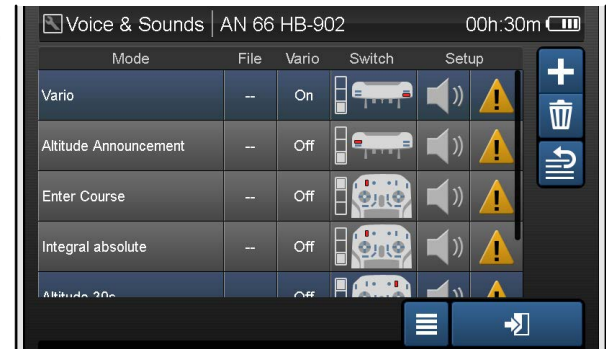
– **Normal**, tab the loudspeaker symbol to enter, press the plus button and select the telemetry data. The list shows all selected telemetry items. Also you see all the live values. The Normal setup let you create frequent announcements of telemetry data. For example if you want to know the "Vario Integral Climb-Rate" every 20 seconds. Press the setup button to configure the voice announcements:

- » The first row shows the item name and the live value.
- » Speak item, if checked, the name of the item will be spoken before the value.
- » Speak unit, if checked, the unit of the item will be spoken after the value.
- » Speak value, if checked, the value of the item will be spoken between the item and the unit
- » File, tab here and you will see a pop-up. Choose the ".wav" then check and you will enter a selection screen. There you can choose your own audio wave file by DOUBLECLICK. This sound will be played very first.
- » Announcement, choose the repeat rate of the announcement

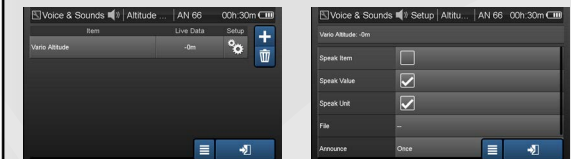


– **Warnings**, tab the yellow exclamation point sign to enter, press the plus button and select the telemetry data. The list shows all selected telemetry items and you can see the live data. Here you can create specific thresholds for telemetry data which will give you the chance to trigger audio or vibration (if you have the vibration module installed, see „10. Hardware extras“ (page 23) for more information) warnings. For example you could create a threshold for the minimum true air speed during landing mode in dependence to the flap settings. Tab the setup button to adjust and configure the warning parameters:

- » The first row shows the name of the selected telemetry item and the live value.
- » Speak item, if checked, the name of the item will be spoken before the value.
- » Speak unit, if checked, the unit of the item will be spoken after the value.
- » Speak value, if checked, the value of the item will be spoken between the item and the unit
- » File, tab here and you will see a pop-up. Choose the ".wav" then check and you will enter a selection screen. There you can choose your own audio wave file by DOUBLECLICK. This sound will be played very first.
- » Operator, choose the operator. For example if you choose "<" the warning will be triggered below the adjusted threshold.
- » Threshold, set a value to trigger the warning.
- » Alarm type, select from the pop-up. Multiple selection is possible.
- » Repeat, choose continuous or up to 4 times repeat.



Tab the "Plus" button to add up to 16 sound modes



The "Normal" setup gives you frequent announcements



The "Warning" setup gives you announcements according to adjustable thresholds.

21.1.17 Startup Warnings

Since the software version 6.08 you have the unique chance to create very specific startup warnings for your model.

Very simple example would be a warning for the "Motor" function. So whenever you are changing to a specific model which has a motor and the motor would be activated already, the radio will give you a warning and also will show you at the screen that the motor function is not at full idle. This will help to avoid unintended activating of all sort of dangerous functions. From now on you never could switch on your model without setting the correct undercarriage position.

But there is even more: the startup warnings menu gives you another cool feature which is called the "Preflight Checklist". You create a checklist which you will see on the display whenever you are using the model memory after boot-up of the BAT radio or whenever you change to this model memory. Here you will see a list which you can create and configure by your own.

Another words you can go through a list which you created and where you put notes about all things which you should check before you are going to operate your model.

Please note that the normal Startup Warnings are only dedicated for this specific modelmemory. The "PreFlight Checklist" can be used for different modelmemories. But you can decide for each model independently which checklist item you want to activate. Of course you can create more than one checklist.

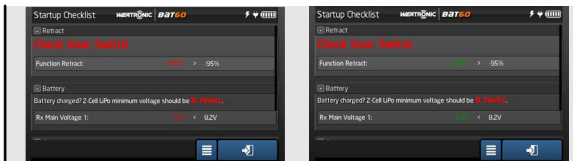
Now first of all some general notes about the "Startup Warnings" feature:

- ▶ Trigger of the warnings, all "Startup Warnings" list entires and ONLY the "active" marked "Pre-Flight Checklist" items will be shown at boot-up and/or at model-change.
 - the "Startup Warnings", will be displayed with the actual value and the adjusted threshold. The actual value will be marked green as soon as it is fulfilling the adjusted conditions. Before this it will be marked red.
 - the "checklist items", each item will be shown expanded and as soon as you tab the check-box the entry will collapse. You can tab the entry to expand it again.
- ▶ Indicator of warnings by PURPLE LED of the ON/OFF Button and acoustic indication (BEEEEEEP), The radio will warn you with a purple LED and a beep as long as there are active startup warnings. This will happen even before you will reach the homescreen.
- ▶ There are 3 possible kind of variations for the startup warnings, also all of them can be adjusted at the same time.
 - **Startup Warnings only**, a list of telemetry data (which includes functions) options which has to reach a adjustable threshold in order that the warning is confirmed. For example you can define that the motor function has to be underneath a certain threshold like - 98%. So you can avoid to activate the engine accidentally.
 - **Pre-Flight checklist only**, a list of items (text which you can type by yourself) which should be checked before the operation of the model. Each item has a check-box to confirm. For example you can create a small list with notes like regarding all the things which you want to be surely checked before you are operating your model (e.g.: air pressure for gears, fuel capacity, battery voltage)
 - **Combination of both**, you can link a Pre-Flight Checklist Item to one entry at the Startup Warning list. So for example you can combine a value and a text according to your needs (text: "Motor control (left stick switch)") and combine it with the actual function percentage value.
- ▶ If you only adjusted startup warnings the homescreen will be automatically shown as soon as you reached all adjusted thresholds at the same time.
- ▶ As soon as you are also using a checklist the info-screen will not disappear by its own and you have to use the "leave" button to reach the homescreen.
- ▶ As long as not all startup warnings are fulfilled at the same time the ON-OFF button LED will flash purple and the loudspeaker will give you a beep.

NOTICE

Nevertheless the connection to your model is working and there are NO control restrictions. So please make sure that you never switch on you model before you have switched on your BAT radio or before you changed to the correct model memory.

- ▶ The checklist entries have no effect to the ON-OFF button and the Beep warning indication. The checklist is more or less only a notes list.
- ▶ If you want to use the PreFlight checklist right before take off one more time you could use the "EYE" button at the startup warnings menu to see all of your entries again. But please consider that the "EYE" view gives you only a preview about the warnings so there is no purple warning and red/green marked values.
- ▶ A checklist can be used for more than one model memory BUT each model-memory can use different items of the list. The "active" items are model dependent so to say.
- ▶ You can leave the "startup warning info screen" even if some warnings or checklist entries are still open. There will be a small warning pop-up which will remind you about that.







red shaded values are not correct and causing a long beep and a purple LED. After the values are correct they turn green and the warning stops.






21.1.17.1 Adjusting Startup Warnings

The menu is separated in 2 areas.

1* PreFlight Checklist, this row shows you the currently selected list and also you see 4 buttons

- Tab here  to select the list which you want to use. You can only assign 1 list to a model memory. DOUBLETAB the entry to select it!
- Tab this symbol  to create a new list. Give it a unique name. Please consider that the previous selected list will be unlinked.
- Tab the  EDIT symbol to reach the menu where you can create list-items, see [„21.1.17.2 Adjusting PreFlight Checklist“](#) (page 72) for details.
- Tab the trash  to unlink the currently selected/assigned list. The list will not be deleted. If you want to delete a list, use the data manager.

2* Startup Warnings list, here you see all of your created warnings. At the beginning the list will be empty.

- Tab the “PLUS”  and you will see the telemetry data assignment screen. Here you have to select one telemetry data. When you leave the menu you will see the selected data at a new list entry.
- Tab the “TRASH”  symbol if you want to delete an list entry.
- Tab the “EYE”  symbol to see you adjusted startup warnings like they would be shown at the boot-up or if you change to this model memory. Please consider that the values are only shown in purple. This is because the “EYE” can not fully simulate the startup warning due to internal reasons.
- A list entry has several columns,
 - Name, here you see the selected telemetry data description. You can tab to change to another target.
 - Operator, initial is equal, BUT you can only choose between “bigger as” (>) OR “smaller as” (<)
 - Value, here you can adjust the threshold. For example if you have your Motor Function and -100% is Motor off or full idle, you should adjust -95% and choose the “bigger as” operator >. Now whenever the motor function is bigger as -95% the warning is triggered.
 - Checklist, tab here and you will be able to link the startup warning to one list entry of the assigned PreFlight Checklist (the assigned list’s name is shown in the top row of the menu). As soon as you linked an entry you will see that the field shows “Set”.

NOTICE

Whenever you changed the PreFlight Checklist you should control all linked items again. Even if the “Set” is shown it could be that the link is not valid anymore.

21.1.17.2 Adjusting PreFlight Checklist

A PreFlight Checklist can be fully customized. It can contain several list entries. Each entry is a so called item. Each one of the items consists of a header and a text field.

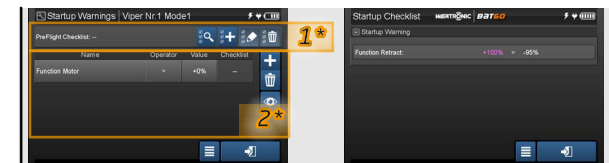
- Tab the “PLUS” symbol to add a list entry.
- Tab the “TRASH” symbol to delete some entries.
- Tab the “EYE” symbol to start a demo mode of the startup warnings.

Each list entry has a header, a text field and an active check-box.

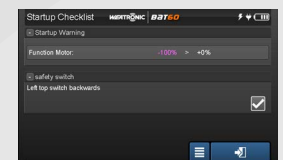
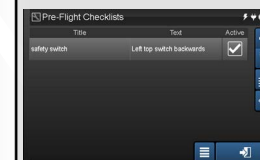
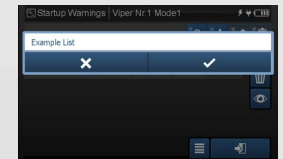
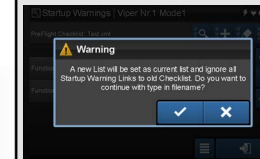
- Header, tab and type a header. The header text is not customizable. The header is always shown.
- Text, tab here and you will enter a new menu which shows the text field on the whole screen. Here you can type text which you also can edit with many options. Tab the field and you will enter the editor keyboard. [„21.1.17.3 Text Editor Keyboard“](#) (page 73)
- Active, tab and check the entry. If checked the list entry will be active and shown at the “Startup Warning” for this model only!



NOTICE

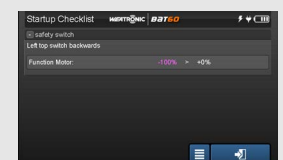
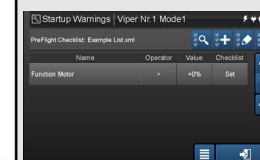
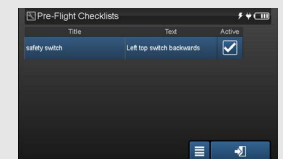
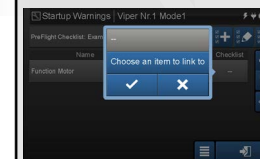
A “PreFlight Checklist” can be used for several different models, but the “Active” check-box is model dependent! So please consider this, if you edit a list entry which you are using for several models. The text will be changed everywhere.



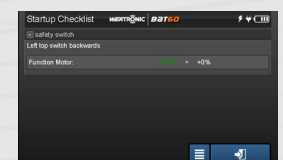
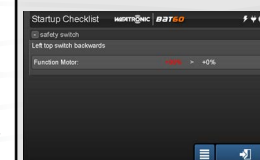
Tab “Plus” and choose the “Telemetry Data”, then adjust operator, threshold and check the active box. Use the “Eye” button to simulate the startup warning.



Tab the “Plus”  symbol and give your “Checklist” a name. Now tab the “Pen”  symbol and you will be able to edit the Checklist. Use the “Eye” again to simulate



Combination of both list. Set a link so to say.



















Reboot or change back to the model memory and you will see the real startup warning with red or green marked values.

21.1.17.3 Text Editor Keyboard

The editor is a text editor with many options to modify the text. Like for example changing the color, the size or to make it blink. Please consider that this format style is a strong tool and you can play around and arrange all checklist entries absolutely to your needs.

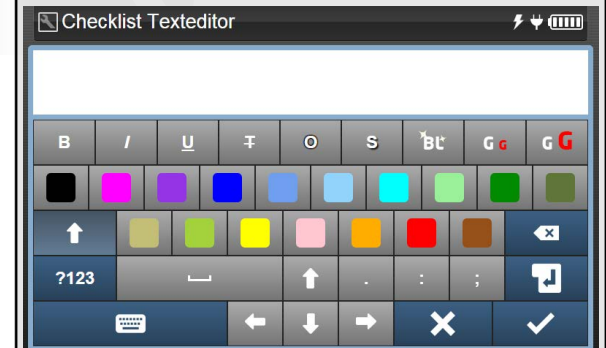
- ◀ If the keyboard is opened the text is shown with the "style tags" code parts, close the keyboard in order to see your created format.
- ◀ "style tags" are always consists of a start and a close tag. The text in between will be formatted and the tags then will not be shown later.
- ◀ We recommend to proceed like this: first of all type the text which you want to have. Then later move the cursor and set the style tags around the text-part which you want to format.
- ◀ Whenever you hit a style tag you set the "open style tag" exactly at the cursor position, now the button will show a / symbol at the button itself. This is the indicator that the "close style tag" is not set yet. So you should move the cursor where you want to stop the format and then you can tab the style tag again to place the so called "close style tag"

Style tag keyboard description:

Nr.	Symbol	Name	"open style tag"	"close style tag"	example raw format / description	example like displayed
1		color, (example)	[\$c#FF0000]	[\c]	[\$c#FF0000]red[\c]	red
2		bold,	[\$b]	[\b]	[\$b]bold[\b]	bold
3		italic,	[\$i]	[\i]	[\$i]italic[\i]	<i>italic</i>
4		underlined,	[\$u]	[\u]	[\$u]underlined[\u]	<u>underlined</u>
5		strike-through,	[\$t]	[\t]	[\$t]strike-through[\t]	strike-through
6		outlined,	[\$o]	[\o]	[\$o]outlined[\o]	outlined
7		shadow,	[\$s]	[\s]	[\$s]shadow[\s]	shadow
8		blinking,	[\$g]	[\g]	[\$g]blinking[\g]	
9		smaller,	[\$f18]	[\f]	[\$f18]smaller[\f]	smaller
10		bigger,	[\$f22]	[\f]	[\$f22]bigger[\f]	bigger
11		toggle keyboard view	-	-	here you can switch between text typing and the style formatting.	-
12		discard	-	-	discard all changes and close the keyboard	-
13		save	-	-	save all changes and close the keyboard	-
14		enter	-	[/]	next line	-
15		delete	-	-	delete one letter	-
16		cursor	-	-	use this arrow keys to move the cursor	-



This is the text editor keyboard normal view. Please consider that the keyboard looks different whenever you use a external device for programming. Normally you can use the keyboard of your device and you will only see the style format view.



This is the style format editing view of the keyboard. Use the arrows key in the middle to move the cursor and then place the style tags. Always remember that each style consists of the open and the close tag.

21.2. Model Management



Tab on the symbol with the two planes between the wrench and the gears. You will enter the model management menu and you will see some general info about the current model on the left and some options on the right. The model management contains every option which is related to a model memory data. So for example if you want to change to another model memory you will find the "Change Model" menu here or if you want to make a safety copy of your model memory you will find the "Import / Export" menu here as well.

The model memory list shows always the last used model at the top of the list.

All the settings and adjustment of each single model memory is stored in a separate file with the ending *.model.

1* Change Model,

tab and you will see a list of all model memories, scroll the list and tab on the model which you want to be loaded. The loading will take a few seconds. You will see a small pop-up which will be closing as soon as the new model is loaded and ready to use.

2* Add new Model,

This will start the weatronic setup wizard and helps you to set a new model (see chapter 19.) Please also study and use the printed "Quick-guide" which was delivered with your radio.

3* Copy Model,

here you can copy an already existing model memory, tab on the small icon at the end of the model memory which you want to copy. Now you have to rename it and approve the name. The copy will be at the top of the model-memory list. We recommend to make frequent safety copies of your model memories.

4* Delete Model,

here you can delete a model, the current model can not be deleted. Deleting of models must be confirmed. Please consider that you cannot delete the current model memory. If you want to delete your current model, you have to change to another model memory first, then you can delete it.

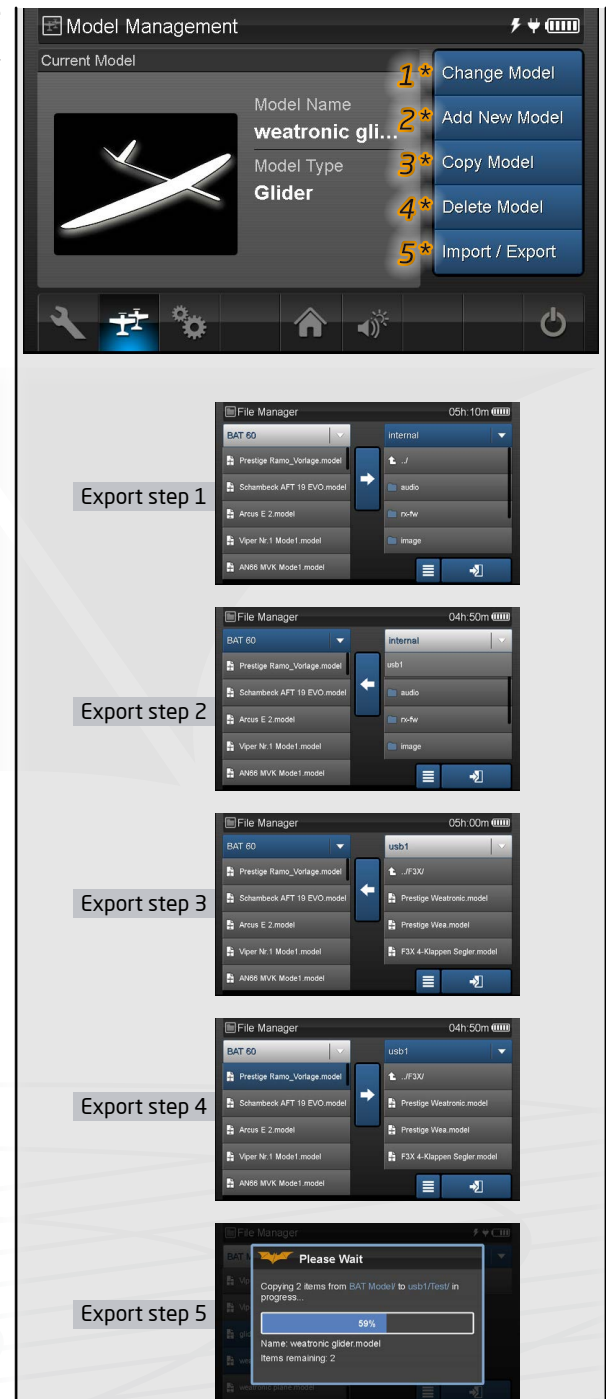
5* Import / Export,

You can save your model memories for safety reasons or to transfer them to another BAT radio. Check the picture on the right and follow this steps for exporting models:

1. Before you go to the Import/Export menu please insert a USB stick or a Micro SD card to your BAT radio.
2. Now enter the menu and tab on the right column top line and select the USB or SD card.
3. Then choose the destination folder or maybe just the top root of your mass storage device where you want to export the model file to.
4. Then select (tab on it and it will be marked blue shaded) the model file form the right column which you want to export.
5. Press the arrow button. Please note that multiple section is possible. Wait until the information pop-up is gone.

NOTICE

To import model memories it works almost the same. But of course the model memory will be transferred the other way. The file extension of model memory is: *.model. Do not edit this file!

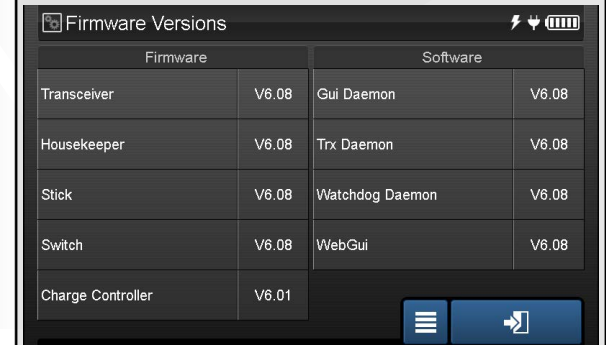


21.3. General Settings



Tab on the gears left of the home screen button. Please notice that these settings are the same for all model memories. For example if you want to adjust the time, check the current firmware versions or if you want to calibrate your gimbals.

- 1*** [Battery Manager](#) Here you can see the status of each of the 4 internal cells. Please consider the special information about the 6 cell upgrade.
- 2*** [File Manager](#) Whenever you have to copy or move some files. But if you want to copy model-memory please go to the model management menu.
- 3*** [Calibration](#) Here you can calibrate all potentiometer and sticks at your radio.
- 4*** [User Settings](#) Amongst other things you can enter your name and set the time. Also you can set a password to lock your radio.
- 5*** [Pre-Flight Tests](#) This is your safety check before operation of your model.
- 6*** [Control Configuration](#)
Here you can adjust 3 different special control options:
 - » [Numpad rotary encoder](#)
 - » [Telemetry Screen Switch](#)
 - » [Stick control configuration](#)
- 7*** [Firmware Version:](#) Always double-check the versions after you did a firmware update.
- 8*** [\(RX-Update\)](#) Update your receivers with your BAT radio. No computer is needed anymore.
- 9*** [WiFi settings](#) Here you can activate the WiFi. Please note that the WiFi is switched off as default. Please also note that this option is still in BETA testing. We recommend to deactivate the WiFi if you want to get the maximum back-channel / telemetry operating range. Nevertheless you could use it during flight.



Current firmware version

21.3.1. Battery Manager

The battery manager gives you evidence about the status of the power source of your radio. The integrated battery board with 4 (or 6) Lilon cells is a sophisticated charger. It records and measures a lot of sensor values. The menu shows you a row for each of the 4 cells (row 1 and 2 are representing 2 cells, which are switched parallel if the 6 cell board is used).

1* Remaining capacity,


The capacity is roughly calculated. Please use it only as a very rough estimation.


2* Voltage,


the actual voltage is absolutely accurate. The maximum voltage for a cell is 4.2 Volts. The minimum voltage is around 3.3 Volts. If the Voltage drops underneath the minimum the integrated chargers tries to recover the cell. Please switch of your radio and put it to charge. Please use the supplied charger.

3* State,

a short information about the health state of the battery. There are 3 different symbols:

 » a green check symbol: cell status is good

 » a yellow check symbol: cell status is ok, but should be charged OR it is not enough fully charged for safe operation of your radio. The "Reserve Cell" is marked with the yellow check symbol until it is charged to minimum 3.9 Volts. This is for safety reasons, as we recommend to only operate your radio with fully charged reserve cell.

 » a red exclamation mark symbol:
The cell cannot be charged or there is a malfunction of the cell. Please switch your radio off and put it to charge. Wait until it shows full charge status (green LED). If the cell is still marked red please contact our service.

4* The 3 blue shaded cells are in use. This only applies if the radio is running on battery power. If charging all lines are shaded blue.

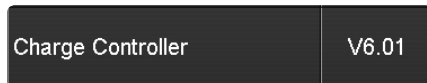
5* The 4th gray shaded is the reserve cell. The reserve is automatically rotated between all cells, so each cell gets the same charge and discharge cycles.

NOTICE

If you have the 6 cells board inside your radio, you will not see it here in this graphic. The 2 additional cells are connected to cell Nr.1 and cell Nr.2 in parallel. So the menu shows row 1 and 2 double capacity.

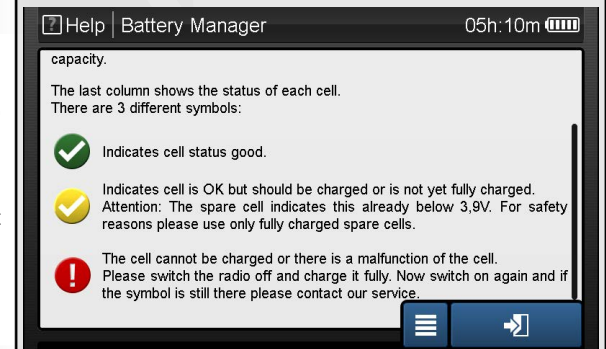
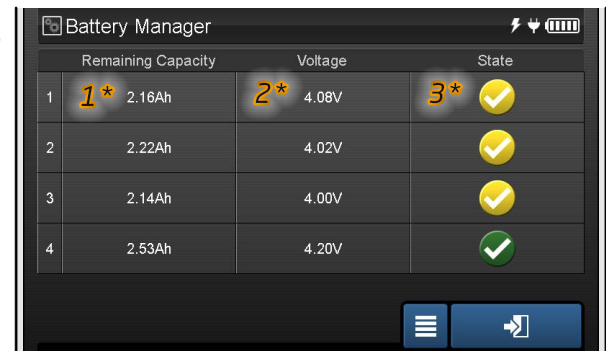
NOTICE

The Charge Controller Firmware („16. Software and firmware UPDATE“ (page 36)) can NOT be updated by the customer. There are meanwhile 2 different versions. The initial version was V1.09 the current one is V6.01, and only since this version the 6-cell version is available, also it includes general improvements. Please be aware that the upgrade to 6 Cell can only be made by the weatronic service.



NOTICE

Do not add 2 cells by your own to the charge controller board. Always contact our service if you encounter and issues or if you have any questions.



21.3.2. File Manager

Here you can access all internal files on the radio itself as well as all plugged USB memory stick or micro SD-card.

NOTICE

If you plug any mass storage device please wait a little bit until you go to the file manager. Depending on the data size on the device it will take a few seconds until you can select it from the dropdown menu.

The main use of the menu is to copy or in general administrate files on the BAT radio, all important files are sorted in folders at the internal storage:

- Audio
 - > here you can store *.wav files which you want to select at the voice and sounds menu
- CustomTelemetryScreens,
 - > this folder normally should be empty, as the BAT radio offers unique features to customize the layout of the telemetry interface screens all related data will be stored in this folder.
- Image
 - > here you can store *.jpg / *.jpeg / *.png / *.gif image files which you want to select at the model configuration menu. Please consider the size and the resolution of the files. The example pictures have a resolution of 594 x 458 pixel.
- Log
 - > Each time when you are using a model the systems starts to generate a log file, this log file contains important data like the telemetry data and other very important data analysis.
 - > The log file is named like this: *MODELNAME_YYYYMMDD_HHMMSS.log*
 - > The log files are firstly sorted according to the model name and then according to the timestamps
 - > See [„22.8 Where can I find the log files and how can I analyze a log file?“ \(page 84\)](#) if you want to analyse some log files.
- Preflight Checklist,
 - > if you created preflight checklists you can find all of them here. Please refer to chapter
- rx-fw,
 - > this folder contains the weatronic receiver firmware versions, which you will need if you want to update weatronic receivers
- Screenshots,
 - > here you will find all screenshots which you created. The format is *.png and the name giving is like this: *HHMMSS_YYYYMMDD_screenshot.png*

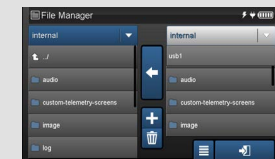
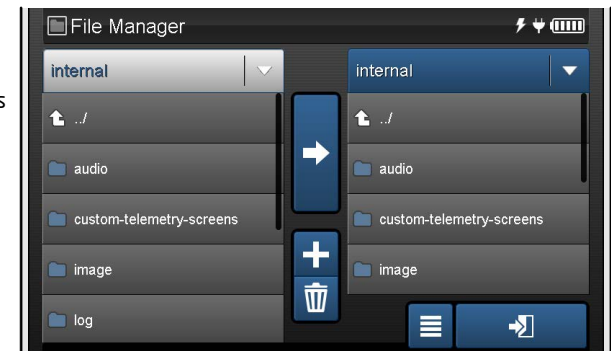
Select the source with the drop-down menu. Please consider to plug the external USB stick or Micro-SD card BEFORE you go to the File Manager menu. Or just refresh the menu by reentering it.

If you want to copy a file, first of all select the destination and then mark the file by tabbing. Now press the arrow button in the middle.

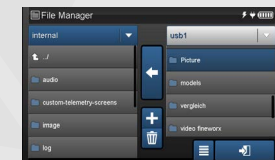
Multiple selection of items is possible. If you tab a file it gets marked, you can see this because the file gets blue shaded.

Also there is a information Pop-Up which shows the copy process.

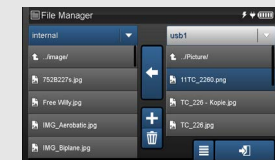
If the list is empty, first of all try to scroll up or down.



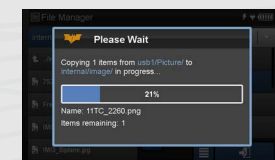
select the source from the dropdown menu.



first browse the target location where you want to copy to.



then select the file you want to copy and tab the arrow key.



21.3.3. Calibration

Here you can calibrate some of the controls of your radio.

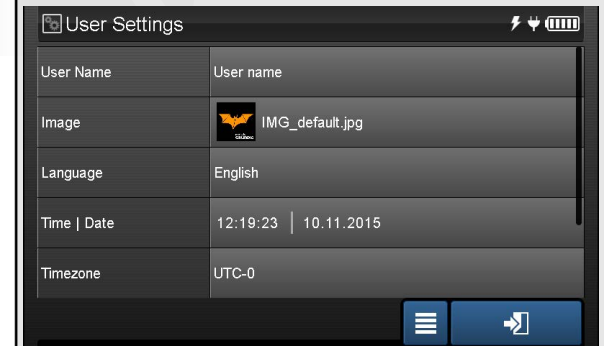
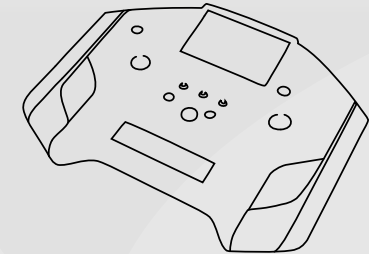
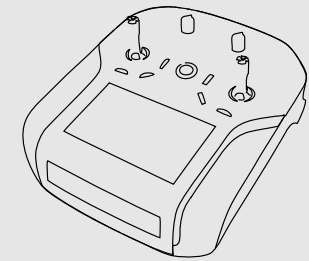
- BAT 60:
 - 2 top potentiometer
 - left and right side potentiometers
 - two axis at each of the two sticks

- BAT 64 :
 - 2 potentiometer,
 - 3 sliders
 - two axis at each of the two sticks

Just press the button “start calibration” and follow the instruction in the text field above. Please see [„15. Calibration of potentiometers, sliders and sticks“ \(page 35\)](#) for a detailed instruction.

21.3.4. User Settings (select language)

- User name, type your name
- Image: this option will be soon available, meanwhile you can assign a picture but it is only displayed here.
- Language, Select a language from the pop-up menu. More languages are being implemented at the moment.
 - English
 - German
 - French (part wise only)
 - Turkish
- Time - Date, adjust the time and the date and choose a format. Please note that the “Sync Time automatically” option will be available soon.
- Timezone, choose your UTC timezone here.
- Password, You can protect your radio with a password. The password will prevent all changes which have to be saved. So you will not be able to browse the menu and you have to unlock the radio with the password.
- Color Theme, this option will be soon available
- Model Categories: this option will be soon available



21.3.5. Pre-Flight Tests

You see two different tests - the "Range Test" and the "Failsafe Test".

- The "Range Test" gives you the opportunity to check and maybe improve the perfect antenna position inside your model.
- The "Fail Safe Test" let you check all "Failsafe" positions for all functions together.

And below you see the RSSI value and the LQI value.

- RSSI (Received Signal Strength Indication) is displayed in dBm (Decibel-milliwatts). The value is always minus and the closer to zero the better it is.
- LQI (Link Quality Indication) is displayed in percentage. Maximum is normally 100%

21.3.5.1. Range Test

When activated the transmission power is drastically reduced. We strongly recommend to do a range test whenever you want to fly or the antenna configuration changed in any way.

The test itself is really easy:

- First of all adjust a proper "Failsafe" position for each function [„21.1.5.1.4. Fail Safe Pos.“ \(page 55\)](#).
- Now you can activate the "Range Test" and walk away from your model. After approximately 50m (160ft) the failsafe position can occur.

If it is less, first of all try to rearrange your antennas inside the model. Carbon fiber reinforced hulls, hulls with metal-finish or metal-sheeting are strongly shielding, and therefore the antenna (the last 60 mm) has to be necessarily moved to the outside. There the antenna also should not be fixed directly on the shielding material. A certain distance has to be maintained. For optimal reception with dual receivers the last 29 mm of the antennas must be fixed at a 90 ° angle to each other. Please consider the specific receiver manual for more detailed information about antenna arrangement. Use the RSSI and the LQI value to improve your antenna position.

21.3.5.2. Failsafe Test

The so called "Failsafe" is a common safety feature. It defines exactly what should happen when the connection to the model is lost. The BAT 60 offers a function failsafe. Each function can separately be adjustable for "failsafe". Please check [„21.1.5.1.4. Fail Safe Pos.“ \(page 55\)](#) for detailed information and how to adjust it. The menu "Fail Safe Test" allows you to test the failsafe configuration for the entire model.

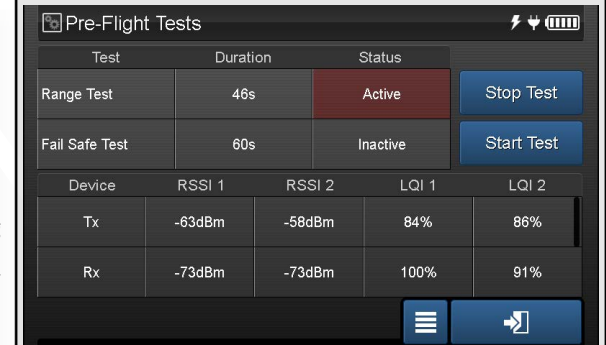
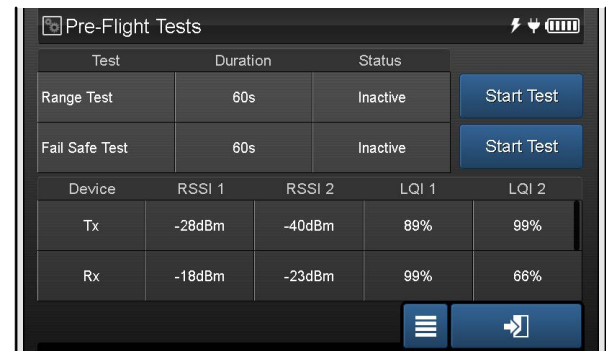
NOTICE

It is strongly recommended to adjust a proper servo failsafe position after you set up your model and before you do your maiden flight. The default value for all functions is the so called "Hold" position.

Means the last transmitted function position will be kept.



There can be serious injuries even death. Cutting Fingers and arms is really easy with strong electric motors. So make sure that especially functions for electric engines with propellers or rotor blades or similar are set to a "OFF" value!



21.3.6. Control Configuration

The control configuration menu contains the setup for special controls. First if you have installed special stick controls like switches, buttons or rotary encoder you have to adjust them here. Furthermore since software version 6.08 you can adjust two more special controls.

- Numpad Rotary, whenever you have the common Numpad („14.6.1 “value adjustment pop-up” (page 33)) you could use rotary encoders to change the value. This haptic input tool makes life easy for adjusting value without looking at the screen. Now you can decide if you want to use all of the rotary encoders to change the value OR if you only want to use a single one.
- Telemetry Screen Switch, this new feature gives you the possibility to use either one of the rotary encoders or a switch to toggle between the telemetry screens and the homescreen.
- Stick Control Configuration, If you installed a additional control to one of the sticks „8.3.2 Stick options” (page 19), you have to configure this additional control. Choose an option accordingly from the drop-down menu. At the moment you can get a 3 position stick switch or an endless rotary encoder with push button function. Check www.weatronic.com for upcoming versions.

NOTICE

Please make a restart of the BAT transmitter after you changed the stick control option.

21.3.7. WiFi settings

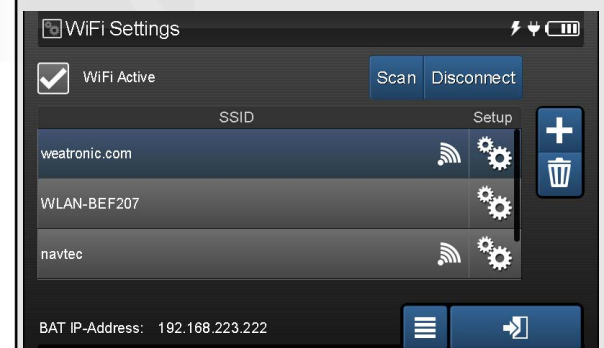
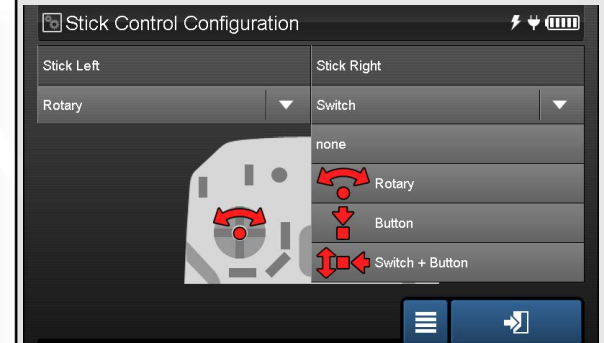
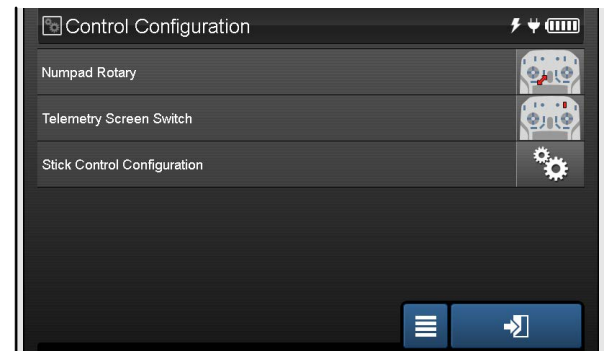
The WiFi options is quite easy and really needful for programming and adjusting your model.

1. First of all make sure that the correct WiFi dongle is plugged to the internal USB port (the left one if you look from the bottom).
2. Please note that the WiFi is deactivated by default at each switch on.
3. Navigate to the WiFi menu and tab the empty box on the left top area and check the WiFi Active option.
4. Now tab the “Scan” button and wait a little.
5. Search and scroll if necessary to the WiFi network you want to join. And mark it by tabbing on it.
6. After this hit the “Connect” button and wait for the pop-up to disappear.
7. If you try to connect a network for the first time you will be automatically redirect to the setup menu.
8. Now add the correct password (double-check the password with the “Show Password” button)
9. You should leave the setup again and continue at step 5. again.
10. After the “connection” pop-up disappears you will see the IP-address of your BAT radio at the lower left area.
11. Every gadget which is connected to the same WiFi can now be used as an external input device.
 - > Make sure that the BAT radio and the other client (for example your mobile phone or computer) is connected to the same WiFi
 - > Open a web-browser and type the IP-address of the BAT radio to the address bar
 - > Now open (normally hit “enter”) the address and you will see the homescreen of your BAT radio

NOTICE

WiFi is still in beta phase and that`s why some WiFi networks will not work smooth and proper. We will improve this as fast as possible. Please refer to this hints when using this external programming option:

- If there are no networks found after pressing “Scan” please refresh the menu by leaving and enter it again.
- Avoid the same menu and simultaneous use of the same menu with several clients.
- We recommend to switch the Wifi off when you are going to operate your model. Because otherwise the back-channel performance is a little shortened.



21.4. Output Settings

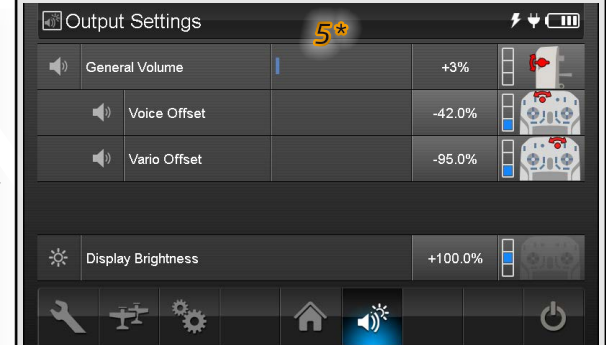
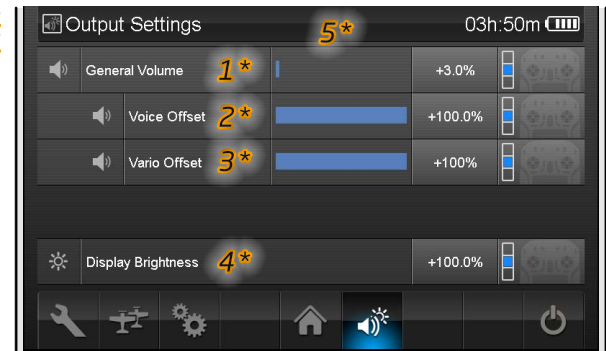


Tab on the symbol right of the home screen button. Please consider that these settings are the same for all of your model memory. Since software version 6.08 the loudness distribution is modified. Please check the Voice and Vario Offset one more time, the loudness should now better match with the percentage values.

- 1*** General Volume: assign a control to adjust the general volume. Which includes all warning beeps. For a linear distribution we recommend:
 - » Low 10% (this is the default setup)
 - » Mid 50%
 - » High 100%
- 2*** Voice Offset: If needed, assign a control to change only the voice output volume offset.
- 3*** Vario Offset: If needed, assign a control to change only the vario-tone volume offset.
- 4*** Display Brightness: If needed, assign a control to change the brightness of the display. We are recommending 3% as the lowest value.
- 5*** Blue Bars: Please check the blue bars as an indicator for the volume of each option.

NOTICE

Please always check that you adjusted the general volume to a proper level before you are operating your model. If the volume is too low you maybe can't hear some warning beeping.



22. FAQ regarding programming a model

22.1 How to add new flight mode?

Please note: We recommend to adjust your plane first of all proper with all function and function mixers. Each new flight mode will first of all copy the normal flight mode.

1. Go to the Flight Mode menu. There you see the standard flight mode which is called "Normal. Now press plus and rename the New Flight Mode.
2. Now go to the "Flight Mode Assignment" menu. There you see a "Priority Overview Graphic". Each line can be activated by a switch. And then each line can be linked to a flight mode.
3. The active line is shaded blue. Priority is from top to bottom.
4. As default all lines have a closed "fixed switch" tag. Just tab on this symbol and you will enter the "switch assignment" menu for this line. Now use the drop-down menu on the top to select the control item which you need to activate this line.
5. If you move a switch you will see that the switch will be marked red at the graphic and beside the switch you will see a small graphic. This graphic gives you evidence about the position of the switch which defines the closed state.
 - > For 2 position switch you will see either the one side or the other side marked blue.
 - > For 3 position switches you can decide for 5 different states of the switch.
 - Switching slowly (wait more then 1 second between switching) will activate the 3 different positions.
 - Switching quickly will activate the 2 remaining possibilities: middle and one of the two sides.
6. The position will be saved right at the moment you leave the screen. So if you use a momentary toggle switch you have to hold the switch until you are back to the Flight Mode Assignment menu
7. Now tap on the most right column and choose the flight mode from the pop-up. This flight mode is now linked to the line.
8. Please check the graphic. You see the priority "path" which leads to the momentary active "line" which is shaded blue. Also the dot at the line is marked blue. So you can easily see if there are some "not assigned" combinations
 - > "empty" circles indicates the "normal" flight mode
 - > "filled" circles indicates that there is a flight mode assigned.

22.2 How do I get a motor runtime timer?

1. First of all you have to create a virtual switch which simulates a switch which is closed if the motor is running. So go to the virtual switch menu and press the plus symbol.
2. Now you have to select the Motor function as the control. Tab on the control icon. You will come to the control assignment page. Use the drop-down menu and choose the function output (fx) option. Now mark the function. It gets blue shaded.
3. After you are back at the virtual switch menu you still have to select the threshold value. This will close the switch logic. The value is the actual function output value which is normally from -100% to +100%. Check the function setup [„21.1.5.1. Function Setup“ \(page 54\)](#)
4. Now go to the timer menu and create a new timer by pressing the "plus" symbol. Then go to the setup and tab on the control icon for the "Stop Control". Now choose the virtual switch option from the drop-down and select your former created virtual switch. Please check the "Inverse" box if necessary.

22.3 How can I get the flap servos moving even?

First of all you have to consider that all servos which should be involved must be assigned to the flap function. This flap function can then be manipulated either by a control or by the FMO (flight mode offset). There is a very convenient way to get very accurate and even deflection for all flap servos:

1. Assign a potentiometer as a control for the flap function. Tab the empty control field (3rd column) at the flap row. Now move the control until it is marked red. Leave the menu.
2. Go to the servo assignment (tab the last column at the flap row) menu of the flap function.
3. Now move the assigned potentiometer slowly to one end position. You will see the according travel side of each servo shaded blue
4. Adjust the blue shaded value for all assigned servos. If necessary you can also use the servo curve to compensate linkage diversity.
5. Do this for the other side as well.
6. Now the flap function moves the assigned servos absolutely even.
7. Go back to the control assignment screen where you selected the potentiometer. You can remove the control by just tabbing besides the radio at an empty area of the screen so to say.
8. If you now use the flight mode offset or a 3 position switch, the flaps will always be perfectly aligned to each other. No matter which position.

22.4 How can I activate the Sum Channel?

Normally flight controller like they are used for many multi-copters are using the so called "Sum Channel" which provides the possibility to send more than one servo position (input) through one standard 3 wire cable. The Tiny, Clever and Smart Series offers the so called "Sum-Channel" feature. Go to [„21.1.2. Receiver Configuration \(BINDING\)“ \(page 44\)](#) to adjust the type of Sum-Channel which you want to have. Some notes regarding this feature.

- The output of the standard PPM signal is always at the last servo plug. (plug 8 at the Smart, plug 6 at the Clever and plug 5 at the Tiny).
 - 8 standard PPM Signals, 12 standard PPM Signals, 16 standard PPM Signals
- There is also the SRXL "Sum-Channel" standard adjustable. More protocols to follow via software update. Contact us if you are requesting a specific one. **The SRXL output is at the first servo plug.**
 - SRXL multiplex 12, SRXL multiplex 16
 - weatronic 16
- As soon as you select a Sum-Channel Protocol you will be able to select and adjust each of the additional virtual "servos". They are marked with the Σ symbol. So please consider that you have to link this virtual servos the same way like normal servos to a function in order to create a output.
- The remaining physical servo plugs can still be normally used. Another words you could control up to 20 Servos with the 4.9gramm Tiny5.

22.5 How can I get a startup warning for my engine?

This feature is very useful and very helpful. It is called "Startup Warnings" and you will find it under "Model Settings". If you adjusted the warning the radio will indicate and warn you whenever you switch on the radio (or change to the model) and the selected engine would immediately start to run if you would switch on the model. As a example here are the easy steps to create such a engine related warning.

- Go to [„21.1.17 Startup Warnings“ \(page 71\)](#)
- tab the "PLUS" symbol on the right and select the motor function at the "Telemetry Data Assignment" menu.
- Now you see the list entry and you have to set the warning up.
- First of all check the Active box.
- Now tab the "EYE" button and you will see a "demo" mode of the warning screen. Please set the motor function to "OFF" and note the value. Normally it should be -100%.
- Then you go back to the startup warning menu. Let`s now assume that motor "OFF" is -100%.
- Choose the operator. Select the ">"
- Now set the threshold value to -98%. It is recommended to add a little dead-band to the value.

NOTICE

Please always control the adjusted startup warning by rebooting the radio or changing back to the model.

22.6 How can I reverse a servo?

A servo is only moving if it is assigned to a function! So if you want to reverse it please go to the function menu and tab on the "Servo" column at the function line to which the servos is assigned. The plug number the assigned servos are shown at this column.

Now you will enter the "Servo Assignment" menu for this function. [„21.1.5.5. Servo Assignment“ \(page 59\)](#)

Use the "REVERSE" button to change the direction of the servo (please consider that this applies only for this function).

NOTICE

At the "Servo Configuration" menu you can only set the center and the limits for the servos! This has nothing to do with the direction of the servo.

NOTICE

Due to the weatronic programming philosophy each function is independent to each other. Which means for example if a servo is assigned to 2 different functions you have to adjust the direction and the travel for the servo at each function independently!

NOTICE

Sequencer servos are exceptions! They can be only controlled at the sequencer menu and are not assignable to functions anymore.

22.7 How can I reduce the aileron differential when pulling brakes?

Go to the Function Setup menu („[21.1.5.1.3. Flex Differential](#)“ (page 54)) of the Aileron function and assign your brake control as a control for the flex differential value. Now you can depending on the position of your brake control adjust a flex differential value.

NOTICE

Please consider that the flex differential value is underlined and so it is flight mode dependent! Please always check the value for each flight mode.

22.8 Where can I find the log files and how can I analyze a log file?

- ◀ Log files are stored on the internal storage each time when you use your a model memory. The name of the log consists of the model name, the date and the time.
- ◀ All available data is logged, so you can perfectly review your flights. Signal quality, servo positions, function position, telemetry data, sensor values and even more will be logged.
- ◀ You will find all log files at the “log” folder. Use a USB stick or a Micro SD card to transfer the data to your computer. „[21.3.2. File Manager](#)“ (page 77)
- ◀ There is third party software available to analyze the log files. The first one is from ULTIMATE JETS and can be downloaded for free. [Download LINK](#)
- ◀ The internally reserved storage size is limited. So as soon as the limit is reached the oldest log file will be removed in order to store the newest one.

22.9 Do I need to update my receivers when I update my radio?

It is strongly recommended to only use receivers and radios with the latest software version. weatronic® assumes no responsibility if there are outdated firmware version used. Go to www.weatronic.com to check the version. Since software version V6.08 the radio features a menu which can update all weatronic receivers. Go to general settings, there you will see the “RX Update” menu. „[16.2. Update of weatronic receivers \(RX-Update\)](#)“ (page 37) The latest and matching receiver firmware is always included so you only need a weatronic update cable to update your receivers. Normally the firmware number at the radio and the receiver firmware is the same.

22.10 How can I adjust my failsafe position in flight?

If you want to test your failsafe position in flight we recommend to create a “fake-failsafe-flight mode”. Instead of adjusting the failsafe value at the failsafe value menu you can use the FlightModeOffset(FMO) to simulate the function position. Now whenever you model is in a normal flight position you can easily switch to the fake mode and if you do not steer you will perfectly see the attitude of your model. Try to adjust a stable and slowing down flight attitude. As soon as you like the adjusted values you can transfer them to the real failsafe value. Then you can delete the fake flight mode.

NOTICE

PLEASE CAREFULLY READ „[2. Safety instructions](#)“ (page 6) AND „[21.1.5.1.4. Fail Safe Pos.](#)“ (page 55) BEFORE YOU OPERATE YOUR MODEL

23. Troubleshooting

23.1 Unable to load page....

Whenever the screen stays white after boot-up and you see a text like "Unable to load page..." please consider that the internal SD-card is not found correctly. The most common reason is a hardware issue. Either the card is not fully plugged in or the card itself has a malfunction. Please contact our service.

23.2 Capacity of batteries / remaining time

The remaining capacity is internally calculated by the charge controller itself. This process is based on the very empty and the very fully charged status of the cells. So whenever the remaining time shows incorrect or strange values you could try to give the radio 2 or more full charging progresses.

One cycle would be:

- ▶ Leave the radio switched on until it switches off by itself.
- ▶ Now leave it switched off and put it to charge until the LED is green.

23.3 Model data is not consistent...

Whenever the radio recognizes that the model-data from the Linux and the model-data of the flight controller (transceiver/housekeeper) is not consistent it will ask you if you want to overwrite the flight controller model data or not. This is a safety feature if the Linux PC somehow didn't store data the correct way. Mostly this only happens during boot-up process and whenever changes are made during off-line status of the receiver. Never confirm this during operating your model! Always secure the model and be aware of all dangerous parts like propellers before you confirm.

23.5 Warning - Pop-ups

23.5.1 Your model data is inconsistent

If the Flight Controller and the Linux PC will have inconsistent data you will get a pop-up with the text:

"Your model data is inconsistent on target... Do you want to send data to target?"

This is only for absolute safety, normally you can always confirm this but never do this during flight! First land your model, secure it and take care about propellers or similar dangerous parts of your model and then you can confirm it.

23.5.2 The memory should be optimized. Do you ...

If the Linux PC recognizes that the internal RAM is almost full you will see a pop-up with the text:

"The memory should/will be optimized. Do you want to optimize now? All data, which are not yet saved will be lost."

This notification will appear after a relative long time of operation. If you check the message the Linux will reboot. This will not affect your model in any way and it will take only a few seconds. Anyhow we recommend to switch off your model first before confirming.

23.5.3 Changing RX-Type will delete Servo Config...

Whenever you are changing the receiver type you will get a warning pop-up with the text:

"Changing RX-Type will delete Servo Configuration and set to default. You cannot undo this action!"

If you increase the servo plugs it will not harm your model and the programming. But if you decrease of course some information like servo assignment will get lost! Mostly if you use the sum signal as well you should be very careful. We recommend to make a safety copy of your model memory before you change the receiver type.

24. Declarations of Conformity

BAT 60:

- All components of the weatronic® 2.4 Dual FHSS RC systems are CE marked and comply with both the requirements of the EU (ETSI EN-300328) and the requirements of the Federal Communications Commission (FCC).
- Hereby the weatronic® GmbH declares that the BAT 60 applies to the requirements and other relevant provisions of the relevant CE directive. A copy of the declaration of conformity and the ETSI and FCC certification can be downloaded at our homepage. (www.weatronic.com)
- 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.
- Cet appareil est conforme à la norme RSS Industrie Canada exempt de licence. Son fonctionnement est soumis aux deux conditions suivantes: (1) cet appareil ne doit pas provoquer d'interférences et (2) cet appareil doit accepter toute interférence, y compris les interférences pouvant causer un mauvais fonctionnement du dispositif.

BAT 64:

- All components of the weatronic® 2.4 Dual FHSS RC systems are CE marked and comply with both the requirements of the EU (ETSI EN-300328)
- Hereby the weatronic® GmbH declares that the BAT transmitter applies to the requirements and other relevant provisions of the relevant CE directive. A copy of the declaration of conformity and the ETSI and FCC certification can be downloaded at our homepage. (www.weatronic.com)

25. Disclaimer of warranty / damages

weatronic® complies with the statutory requirements granted a 24-month warranty. To assert a warranty claim the corresponding article should be sent to the seller.

For processing the warranty claims

- proof of purchase
- detailed description of the damage
- log files of the accident.

are needed.

weatronic® will not issue warranty or guarantee for:

- improper operation
- mechanical changes
- polarity and external surges
- short circuits
- overheating
- mismatch of firmware version

weatronic® assumes no responsibility for any loss, damage or expense arising out of incorrect use and operation, including any kind of resulting consequence. As far as legally allowed, the commitment of the weatronic® GmbH to pay damages, for whatever legal reason, is limited to the invoice value of the directly involved and damage-causing goods of the weatronic® GmbH.

26. Disposal instructions for countries within the EU

Inside the European Union the weatronic® BAT series transmitter must be disposed separated of the household waste by end of its service life.

Proper disposal information can be obtained by the local authorities.



27. You need help?

Ask our support at support@weatronic.com or call us under : or +49 (0) 33 75/24 66 0 88 (service hours: Monday to Thursday 10:00 to 12:00 and 14:00 to 16:00 / Friday 10:00 to 12:00)

Wildau, 29/12/2015

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