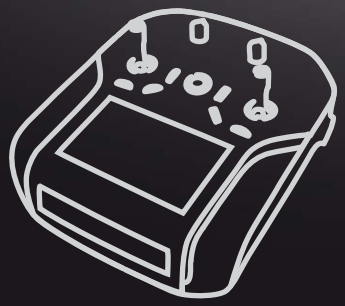
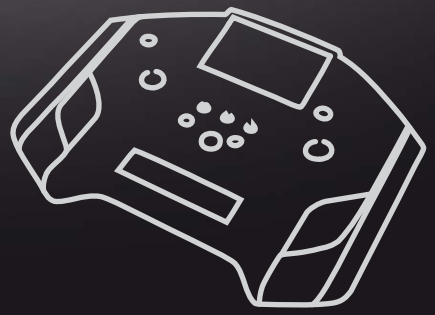
V6.06

WEATRONIC®

user manual

2.4 Dual FHSS
Frequency Hopping Spread Spectrum





BAT60®

BAT64®

BAT60® and BAT64® User Manual (Software Version 6.06)

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 webpage. 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
    - 4 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 batteries are connected parallel as the main power supply
    - One battery is always reserved as a 25% reserve, this job is rotating - thus ensuring uniform aging of all 4 batteries
    - Charging during flight is possible
    - Each battery 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, 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 loses by digitizing)
    - True 12-bit resolution, 4096 points
    - Temperature Compensated
- Data recording on internal micro SD memory card (only useable 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 grey marked software options are still under field-testing and are not yet activated.

NOTE: All yellow marked topics are now available with software version 6.06. Or lately available as a hardware upgrade.

Content: NOTE: All yellow marked options are new or changed.

1. Scope of supply

- BAT 60 or BAT 64 (different colors schemes are available)

- Robust aluminum case with foam inlay
- Switching Power Supply with UK/US/EU/AU adapter
- Allen key set
- weatronic “feedback part” standard set (SL, CD, CS, CH, one of each, check chapter 8.2 for more Info)
- Neck strap or Cross belt
- “setup wizard” Quick Guide (printed)

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° Celcius.
- 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 rotating parts from the motor to avoid danger especially during programming and adjusting your model.
ALWAYS take care of casual bystanders, because they don't know about the potential danger!**

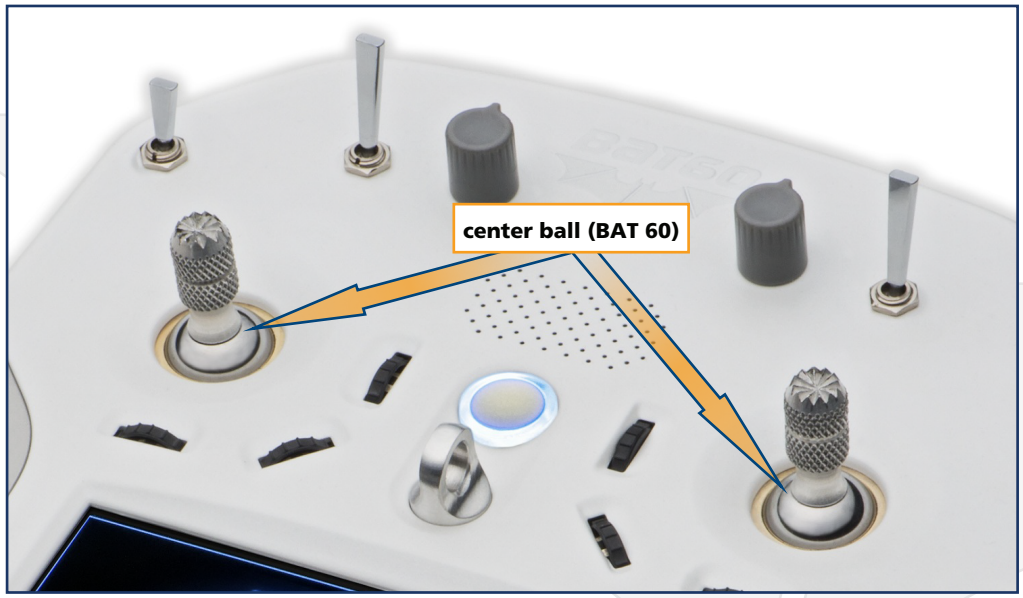
Since the device contains small parts which can be swallowed, an increased level of care is required, especially for babies and infants.
Not recommended for children under 3 - small parts may be inhaled or swallowed.

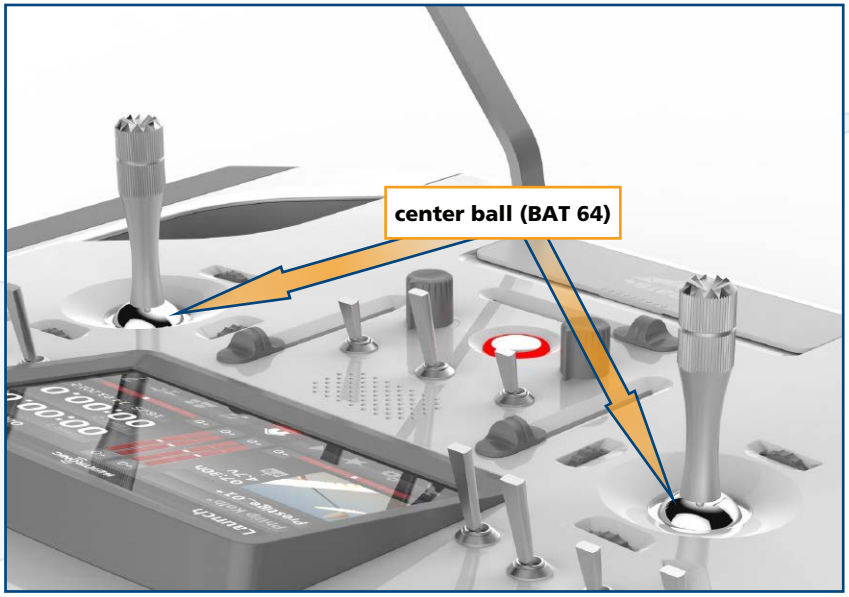
3. Technical data

- 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 (see chapter 21.3.1)
- 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: Bluetooth, 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 the next page: there you see the exact place

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

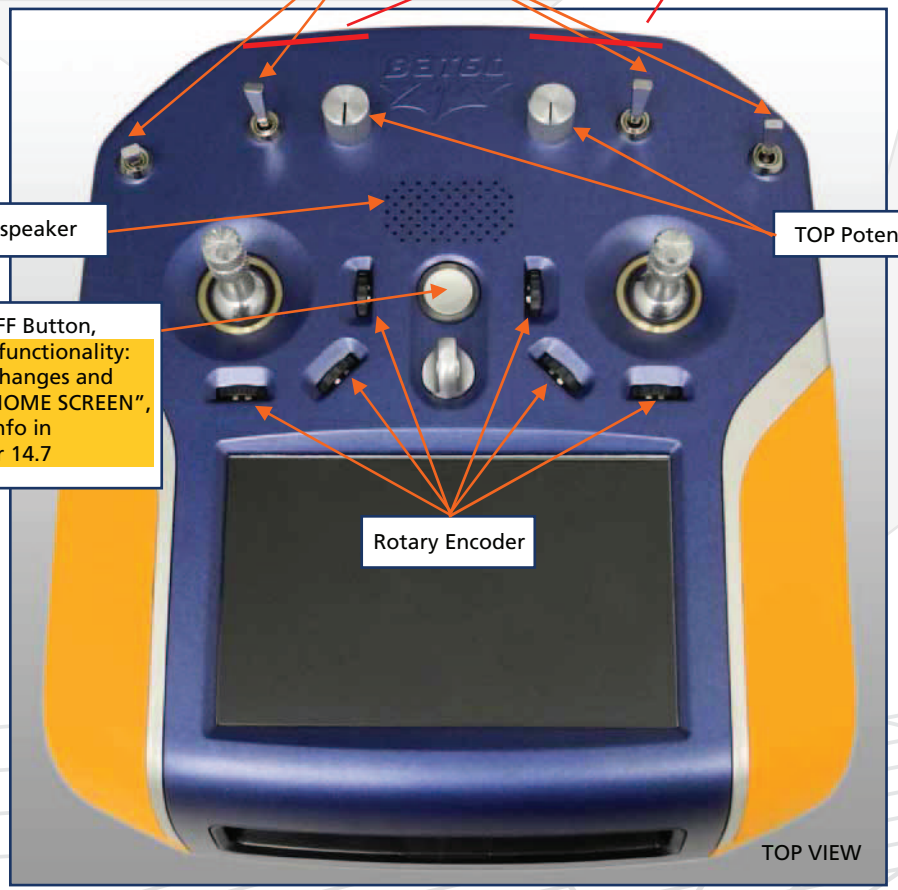
- If you want to store your weatronic transmitter for a longer period, please charge it completely, check if it is dry and place it inside the aluminum case. Then keep it in a cool and dry place and avoid direct sunlight.

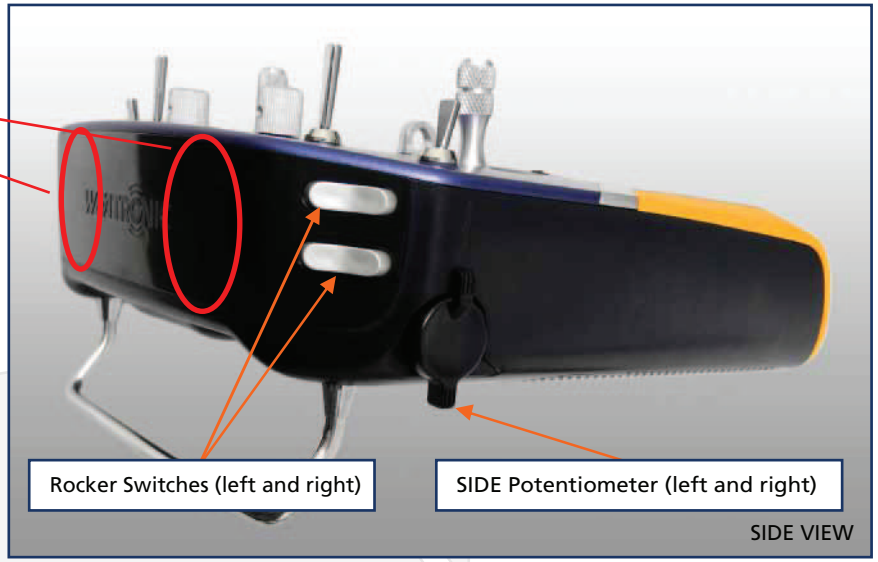
5. General overview

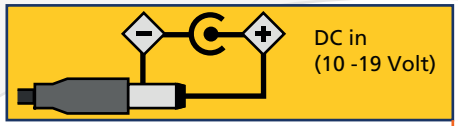
5.1 BAT 60 overview

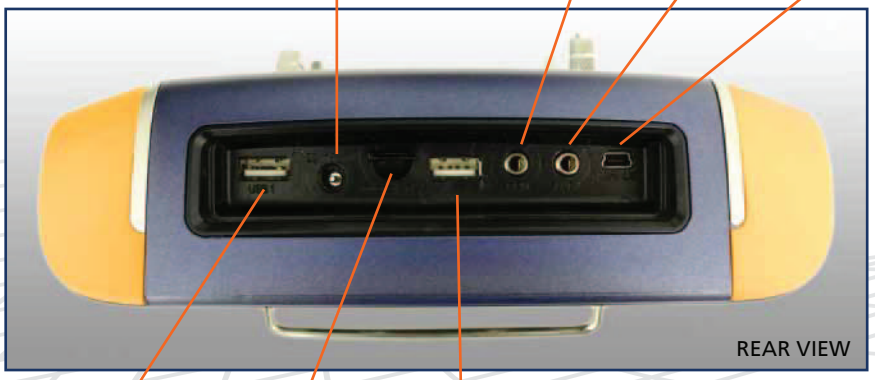
2 internal Patch-antennas DO NOT COVER!!!

Toggle Switches (TS)



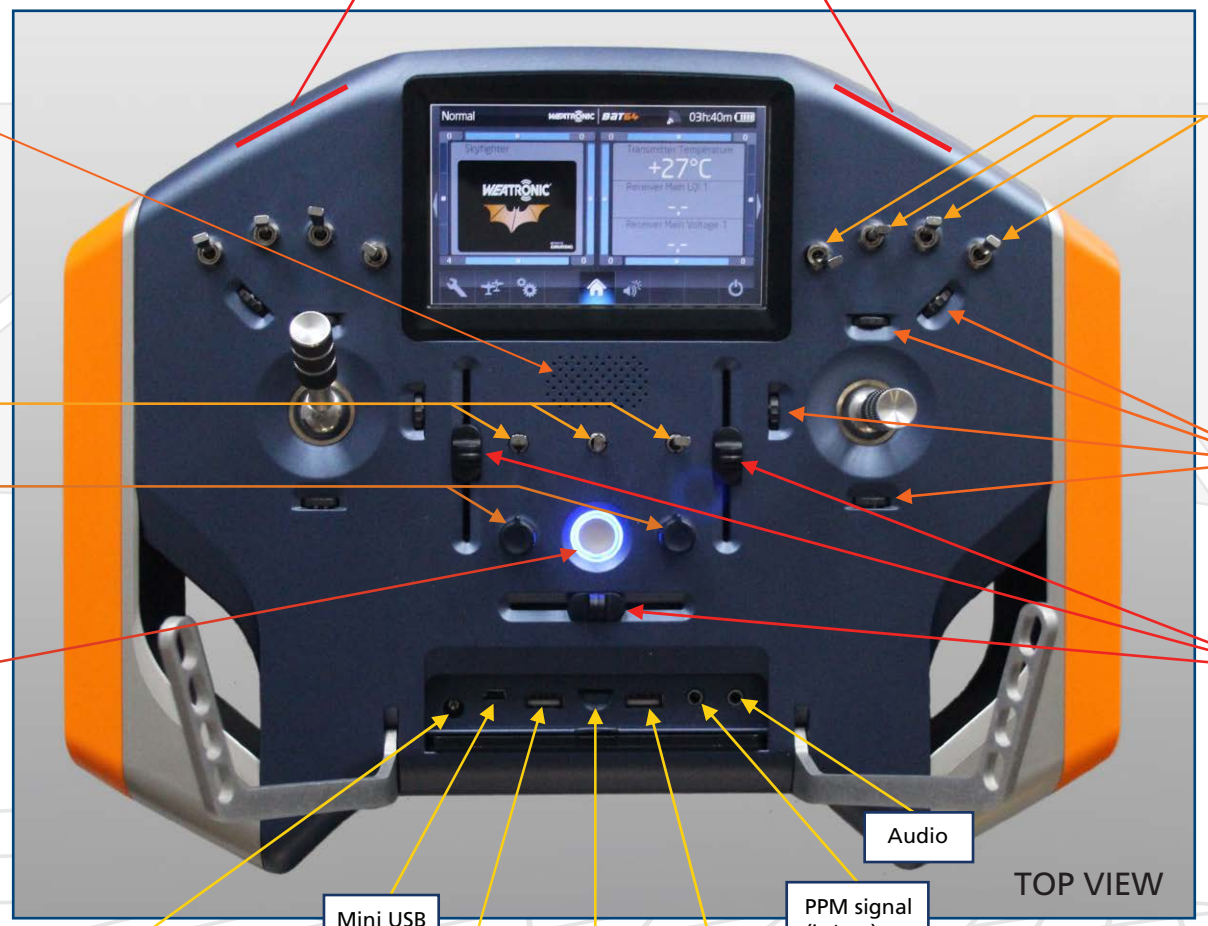






USB „1" | Micro SD | USB „2" — Only for mass storage devices like USB-sticks and or MIcro-SD cards

5.1 BAT 64 overview



6. Overview about internal electronics

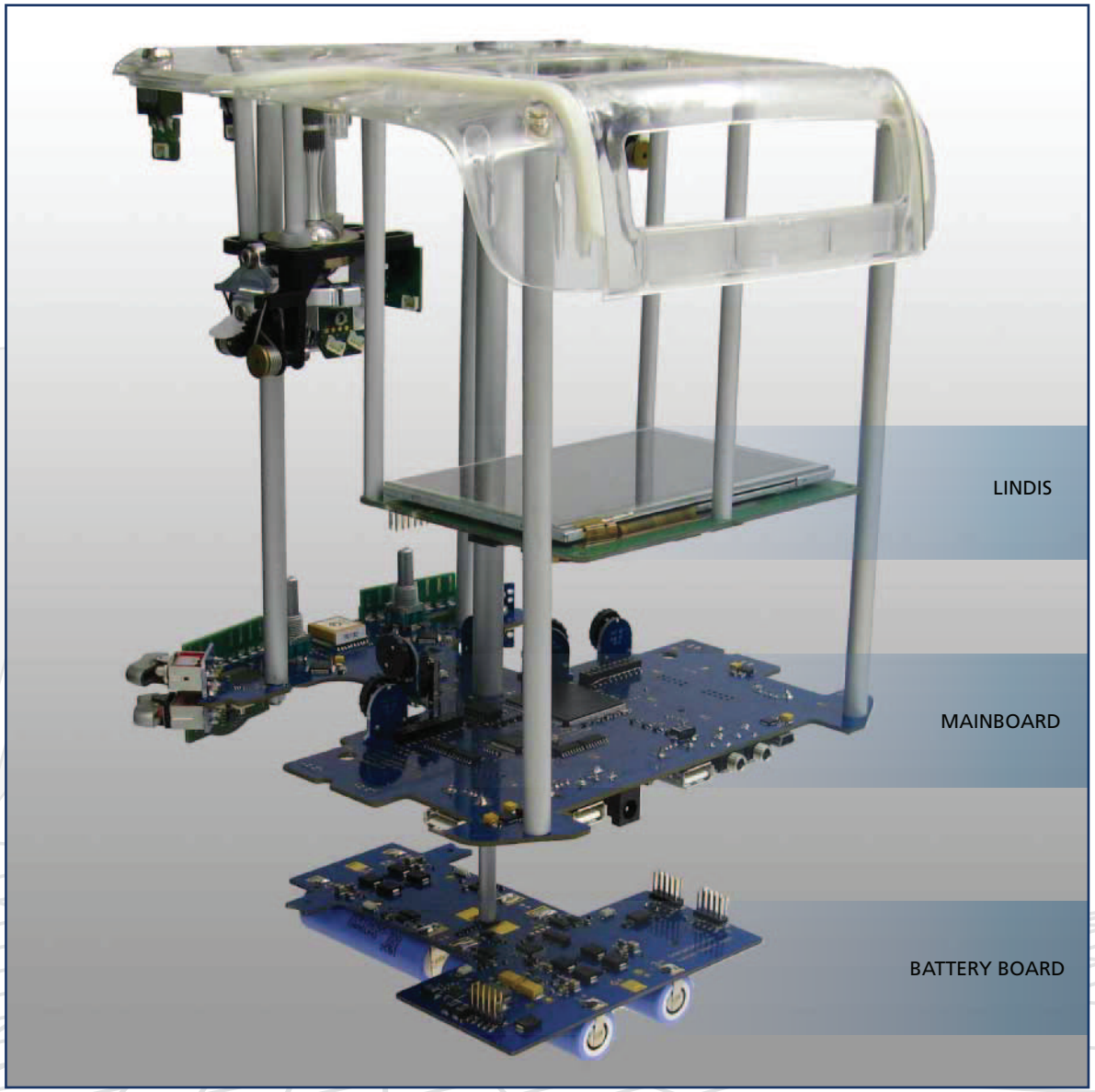
6.1 BAT 60 internal overview

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 form 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.



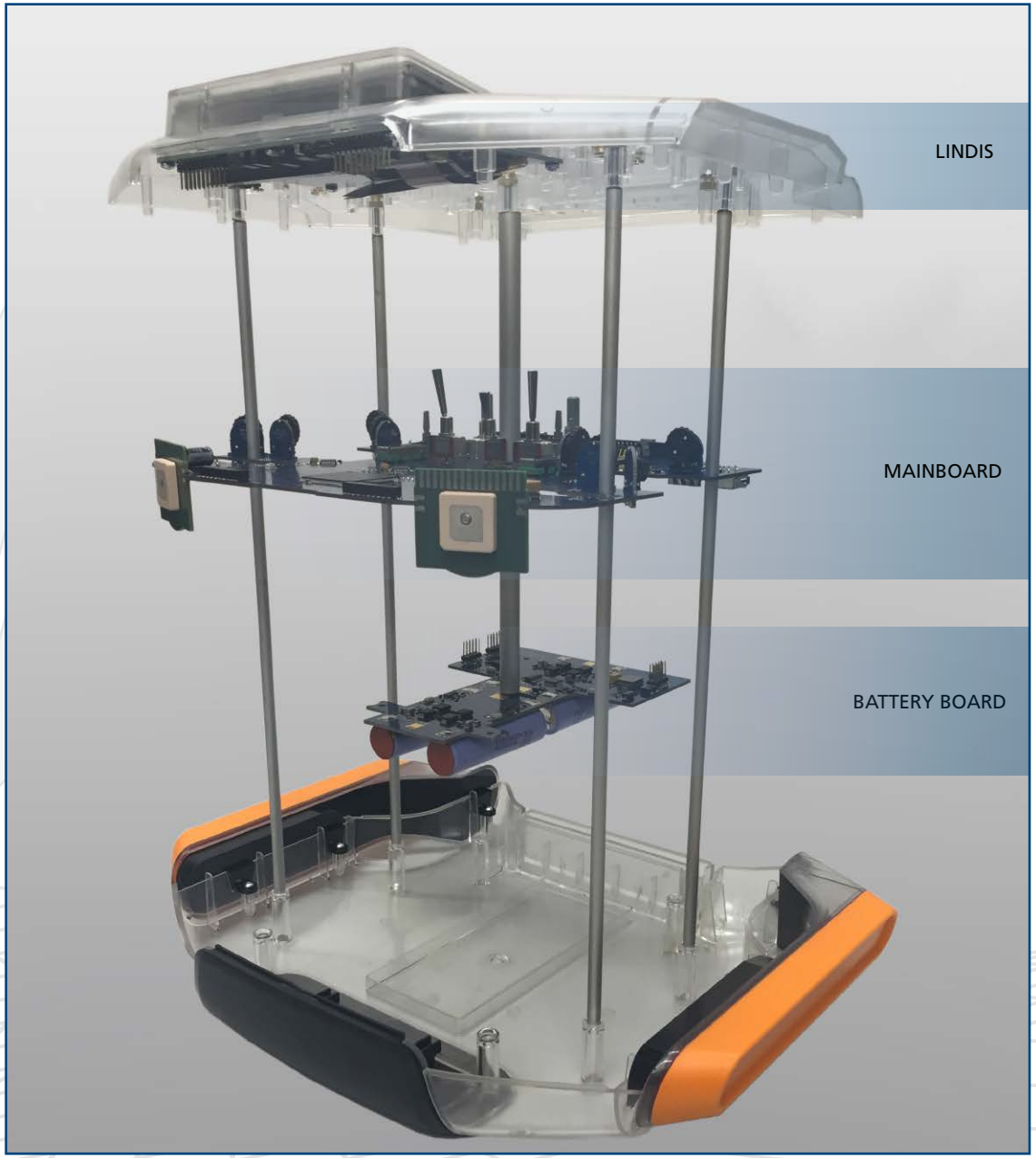
6.1 BAT 64 internal overview

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

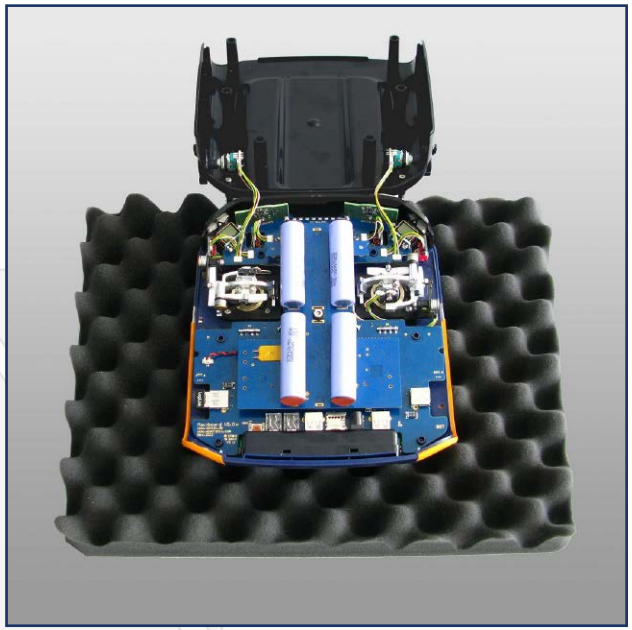
- Each stick includes 2 hall sensor boards. All cable connections form the hall sensors boards to the Main Board are the most significant cable connection inside the BAT 64.
- There are some small PCBs at each toggle switch



7. How to open and close the BAT transmitter case

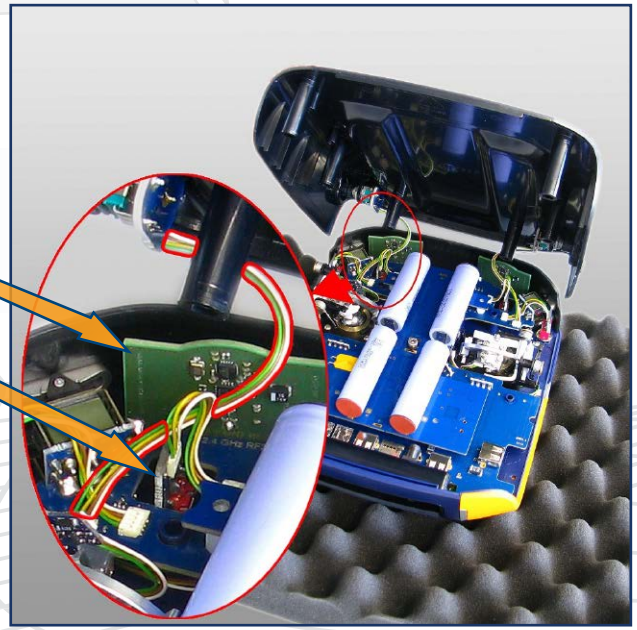
7.1.1 Open BAT 60

- 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.
- 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 webpage and our YouTube channel.



7.1.2 Close BAT 60

- 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.

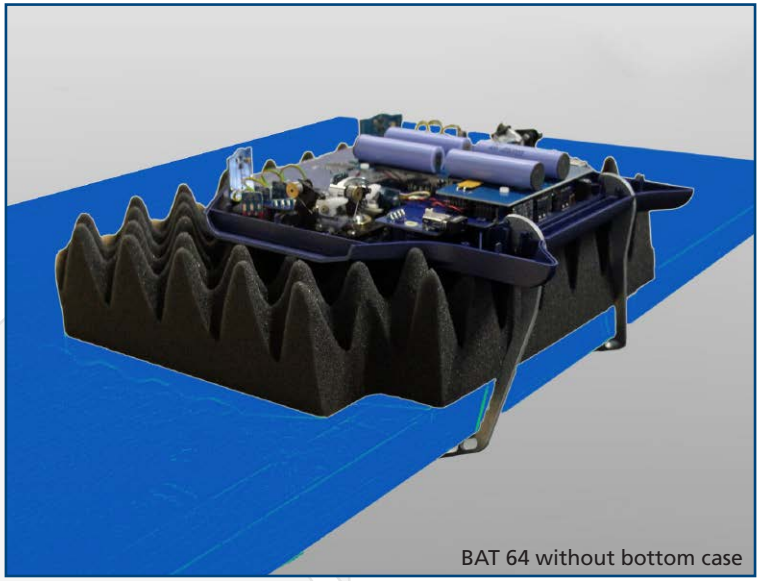


- Now close the case. Please check that there are no cables jammed.
- Finally screw all 6 (M3x20mm) with the 2,5mm Allen Key. We recommend a maximum torque of 80Ncm (hand tight).
- Switch on and if necessary navigate to the calibration menu (general settings) and calibrate the controls (see chapter 15.).

7.2.1 Open BAT 64

- 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.
- 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 squezzed 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 webpage.

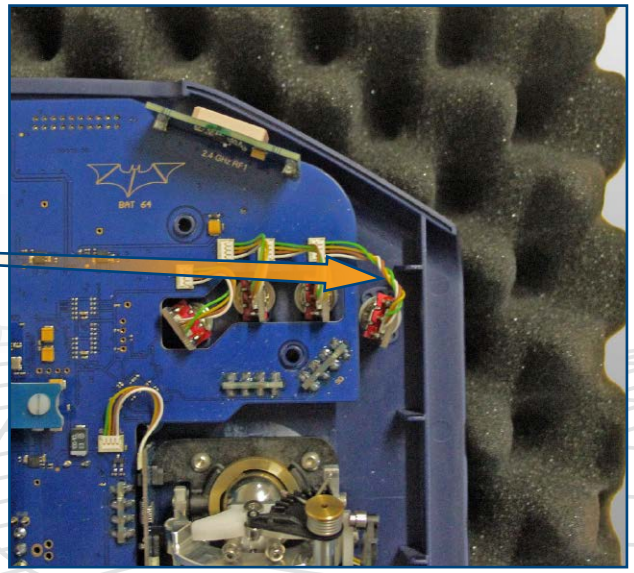


BAT 64 without bottom case

7.2.2 Close BAT 64

- 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 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.
- Now slowly flip the bottom part above the top part and make sure that the cables of the outer toggle switches are not squezzed.

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



- 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 (see chapter 15.).

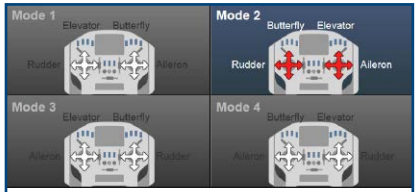
8. Mechanical stick adjustment

The weatronic stick is a revolutionary design. It allows you to adopt each of the 4 axes to your personal needs. You can adjust the "springforce" and the "feedback characteristics". Check also the "weatronic-feedback parts" description at our webpage.

Mainly you will open the case to customize the mechanical stick characteristics. Or just to change the "Mode". There are 4 different common Modes. Called Mode 1 to 4. You can order your BAT transmitter with Mode 1 or Mode 2.

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.

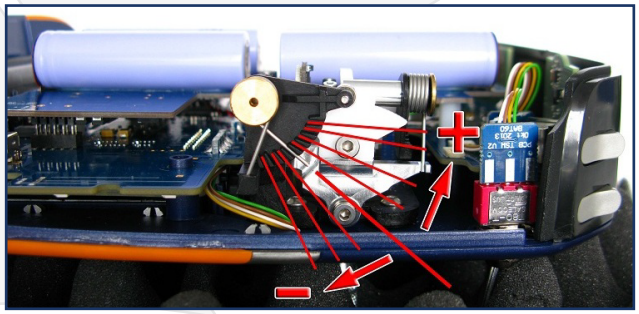
BAT 60 mode selection (setup wizard)



BAT 64 mode selection (setup wizard)

8.1. How to adjust the "spring force"

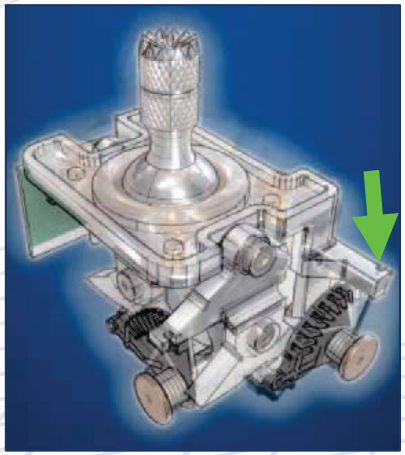
- Very easily done by simply choose one of the 8 gaps on the so called "spring arm".
- Please check the picture on the right. The more you put the spring "upwards" the more tension will be applied. So you can very easily adjust the restoring force for each axis.
- Never modify the spring in any way.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

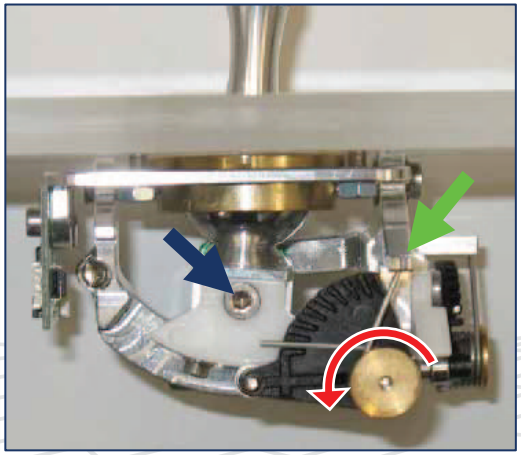


8.2. How to adjust the "feedback characteristics"

- First of all release the tension of the spring and release it (see the green arrows).
- Then flip the "spring arm" away for better access to the feedback part (see the red arrow on the
- lower right picture).
- Use the 2mm Allen Key and unscrew the white "feedback part" (see the blue arrow).
- Now choose your preferred new "feedback part", there are 7 different ones (see the mark on the outer side of every part):

o CN: CenterNormal (linear force)
o CS: CenterSoft (progressive or increasing force)
o CH: CenterHard (regressive or declining force)
o ST: STep (the "ratchet")
o SL: SLide (no "ratchet")
o CD: CenterDetend (like the "SL" but with a sense able center mark)
o MA: MixA (combination of "ratchet" and "spring-loaded")
o MB: MixB (mirror part of MA)

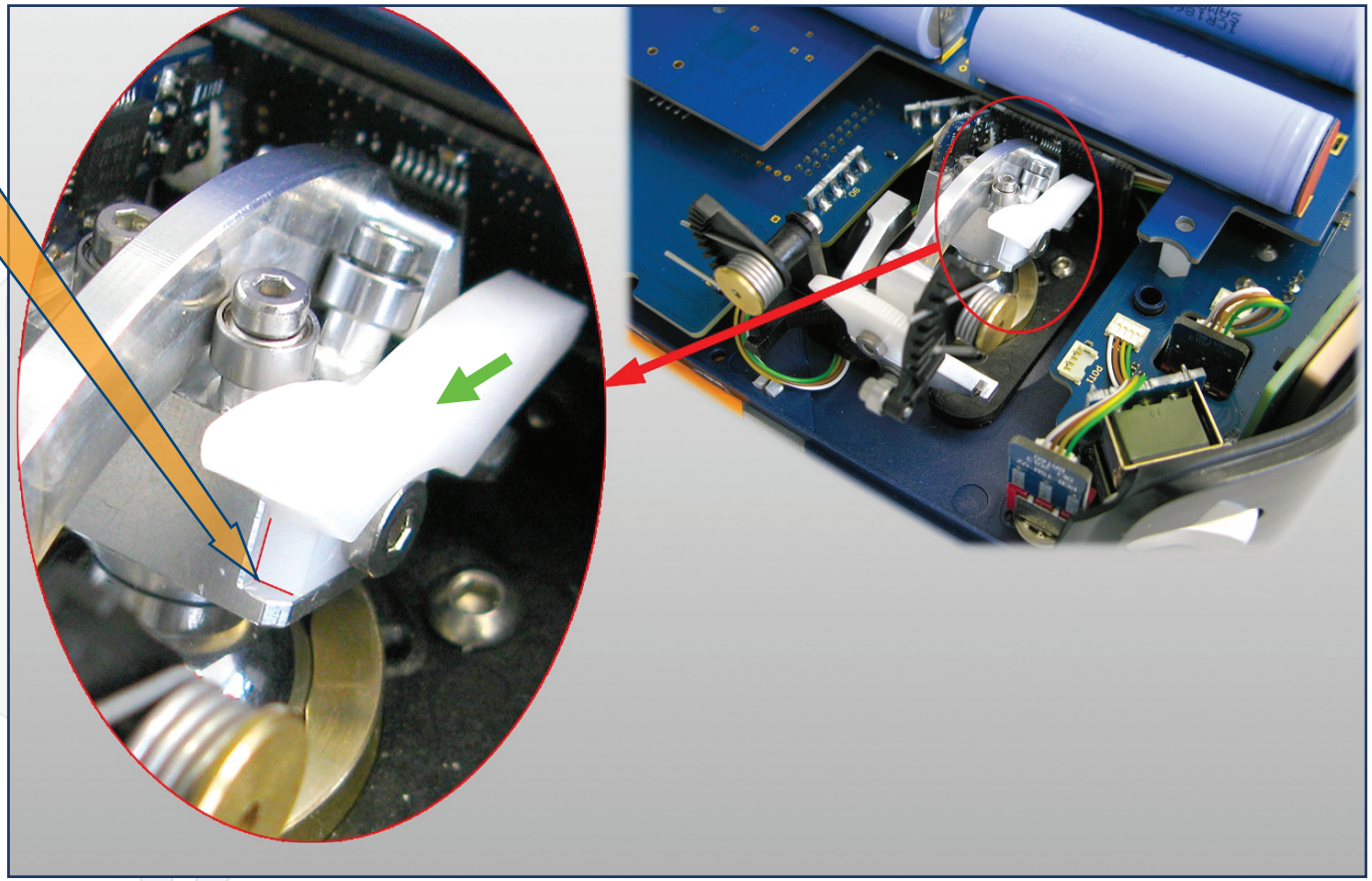




- Screw the new "feedback part" back in place, the mark has to point outside. Tight the screw slightly hand-tight (maximum of 40Ncm). Make sure the plastic part has a completely seamless fitting to the aluminum part.
- Finally flip back the "spring arm" and attach the spring back in place.

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.

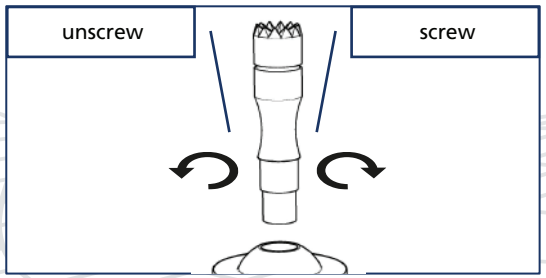


The upper “feedback part” surface (green arrow) where the “spring arm” ball bearing is touching is extremely critical.
Even the smallest scratch or dent is clearly recognizable as a “scratchy” feeling on the stick. So please take care here. The surface should be smooth and clean like a mirror. Replacement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

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.
Check the weatronic online shop for latest informations.
Please do not use any tools here. Again hand tight is enough.



8.3.2 Stick options

There are several options for upgrading the stick itself with switches, buttons and or encoders.
Check the weatronic online shop for latest information about available versions.
At the moment there are 2 different versions:
- 3 position Toggle Switch
- Rotary encoder with push button function

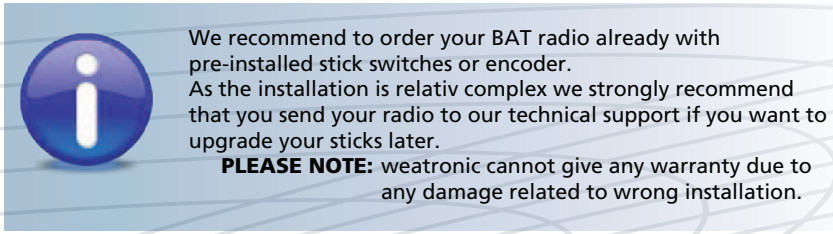
Mounting the stick is very userfriendly. Follow this steps:

1. Switch the transmitter off and open the case (see chapter 7)
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 centerball 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 centerball drill hole BUT do NOT screw it yet.
5. Twist the cable gentle 5 times counterclockwise.
5. 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 (see chapter 7)

(8.) If you mounted the stick with the 3-pos. switch you should now allign the switch and fix it with the small nut.

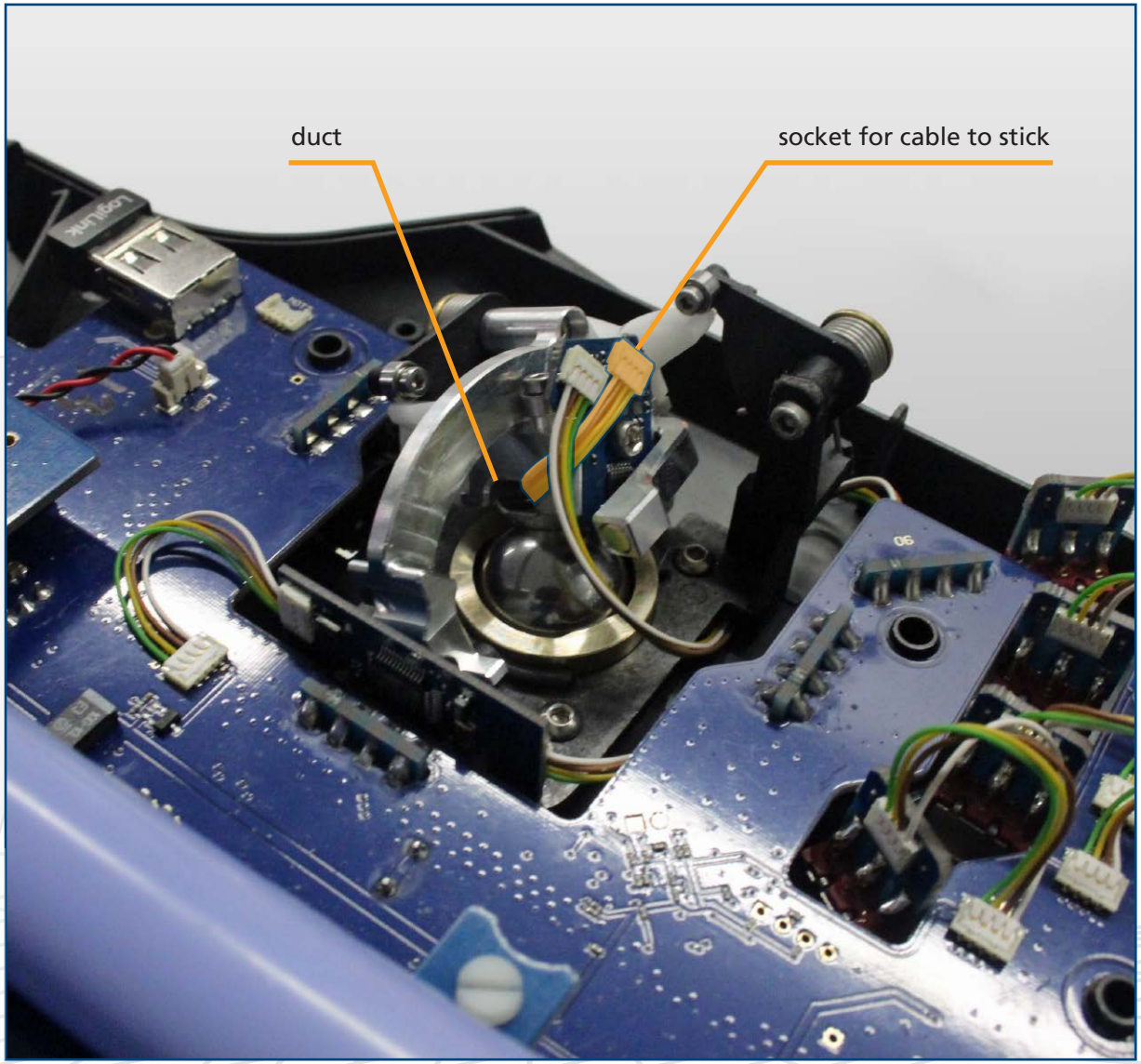
After hardware mounting you have to activate the new stick controls at the general settings. Also refer to chapter 21.3.6

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



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

PLEASE NOTE: 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!

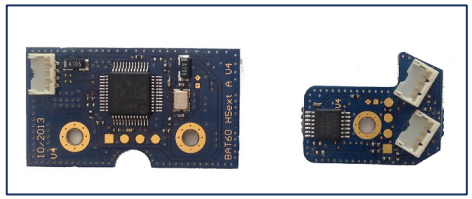
Whenever you open the transmitter and especially before closing the radio, please always check a proper locking of the cables connectors to the sockets and also make sure that the cables are placed in the right way!

See the picture on the right about the perfect allignment of the “stick-mechanic” cable connection.

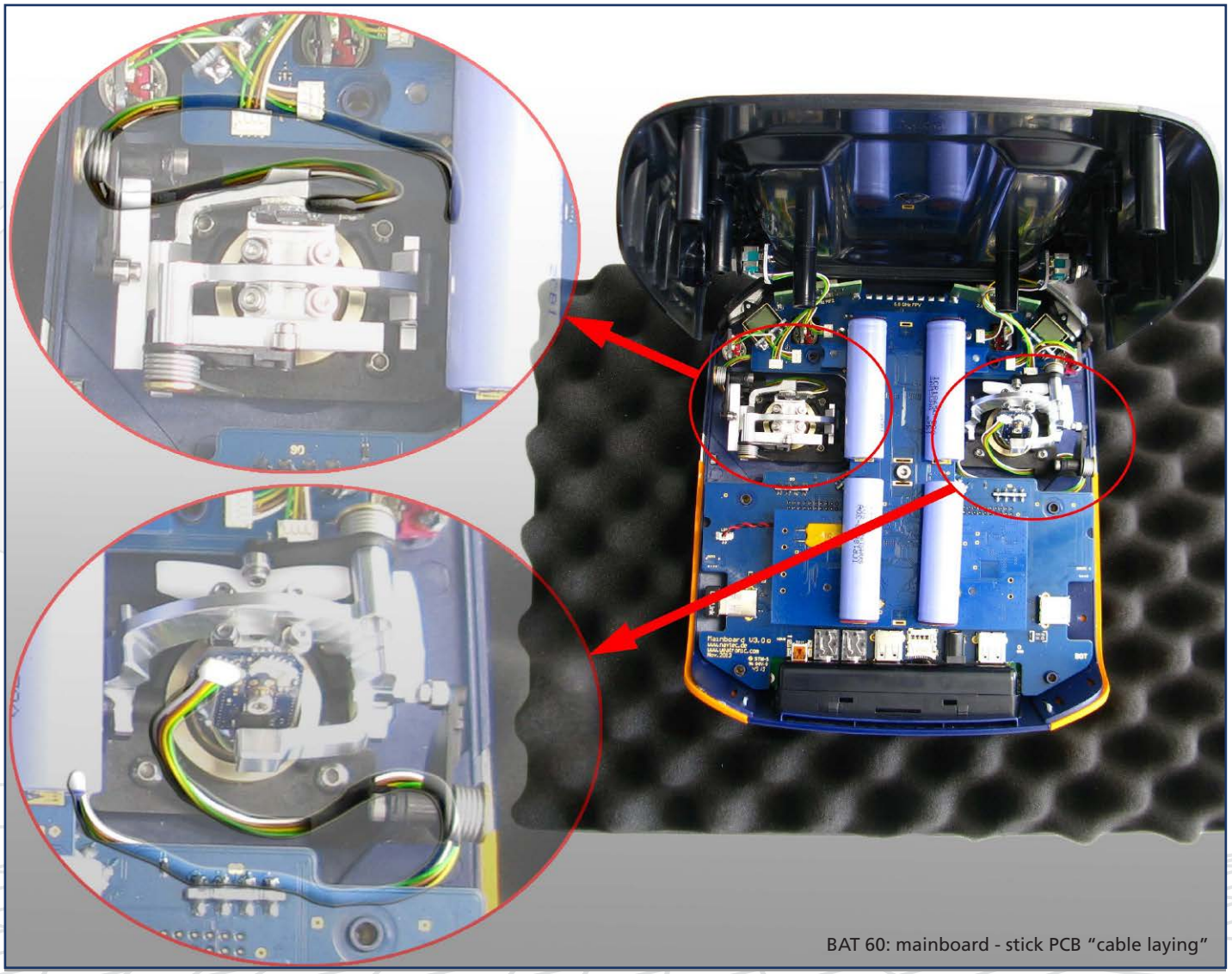
Whenever you encounter any issues or any visual damage to one of the cables or the stick itself do NOT operate your model. Never modify the stick in any way! Contact our service for repairs.

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

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 (see chapter 8.3.2)



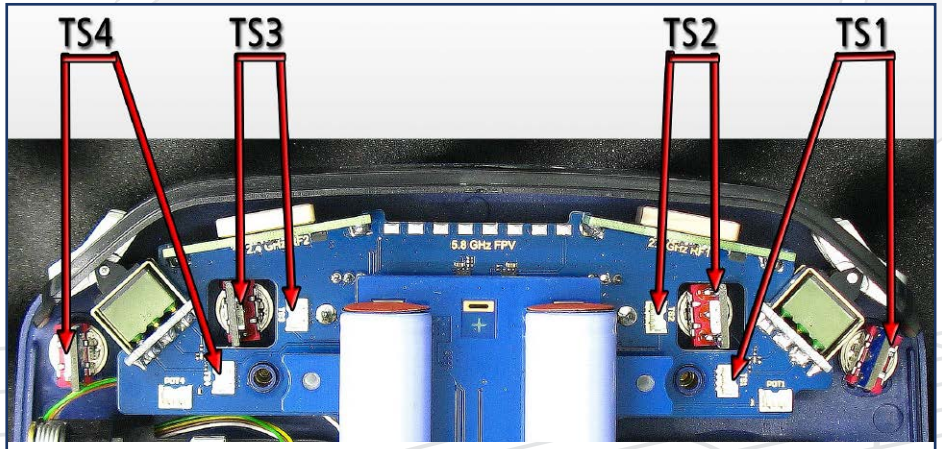
BAT 60: mainboard - stick PCB “cable laying”

9. Toggle switch adjustment BAT radio

9.1 Adjustment for BAT 60

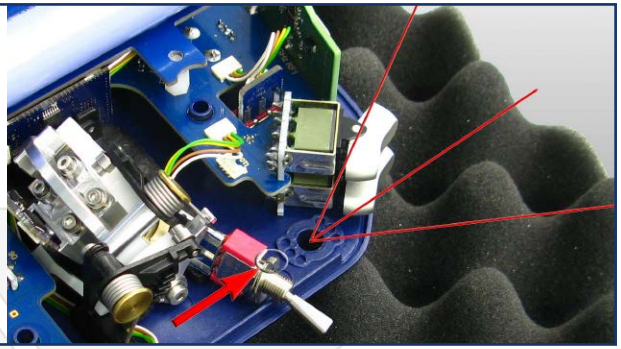
- You can customize the 4 top toggle switches (TS1 to TS4).
  See also the top view picture at chapter 5.1.
- There are several different kind of switches available.
  Please check our web shop for detail information.

- 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 bottom right picture.
- 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 webpage or the weatronic online shop or also the weatronic youtube channel for a short video.

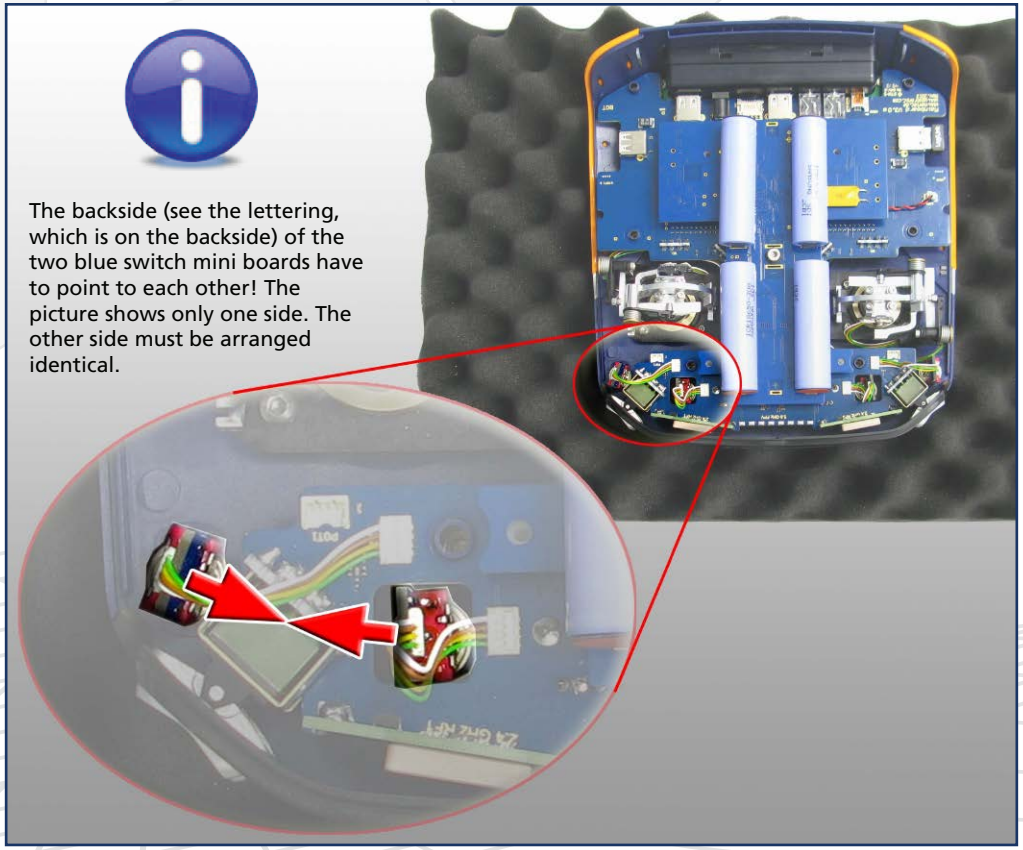


Also make sure that the cables are not twisted and the connectors are placed right!
The sockets on the mainboard are tagged with TS1 to TS4
The length of the cable is 50mm.

Be careful, hand-tight is enough! The plastic case or the pin (marked with the red arrow) which prevents the switch to turn can be easily damaged.



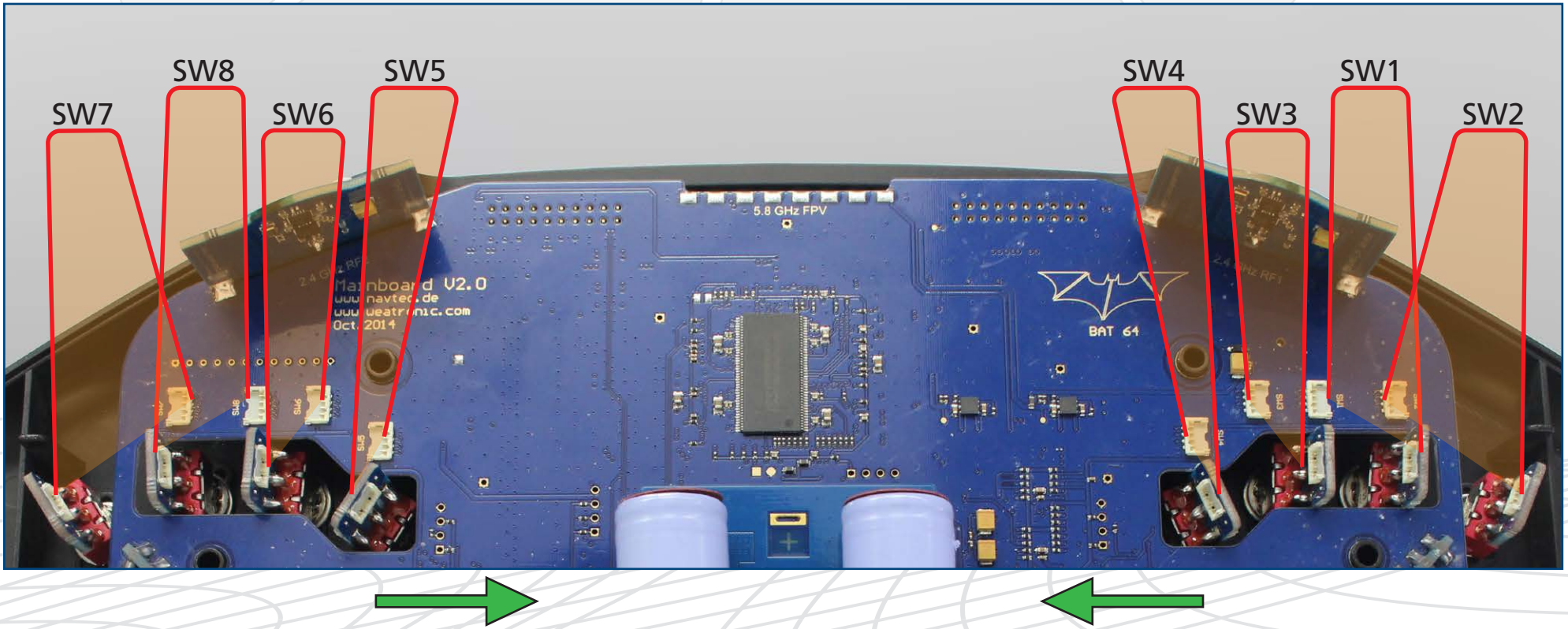
The backside (see the lettering, which is on the backside) of the two blue switch mini boards have to point to each other! The picture shows only one side. The other side must be arranged identical.



9.2 Adjustment for BAT 64

- You can customize the 8 top toggle switches (SW1 to SW8). See also the overview picture at chapter 5.2.
- 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 green arrow.
- 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 doublecheck that the plugs are locked 100%!
- Please also check the weatronic webpage, the weatronic online shop or also the weatronic youtube channel for a short instruction video.



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.

- 7 different kind of toggle switch behaviours. Always check our webshop for latest Versions.
- The 2 top potientiometer are also available in aluminium.
- 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 aluminium.
- In addition there is a feedback part tunning set available. (see chapter 8.2)
- There is also an option to install a Bluetooth chip to the mainboard. See chapter 21.1.4.2
- The Wi-Fi dongle is a standard 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 simultaneous 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 the help menue.
- The Battery upgrade to 6 cells is available. See chapter 21.3.1

11. Charging BAT transmitter (10 - 19 Volt)

The BAT radio is equipped with 4 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 by weatronic, 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.

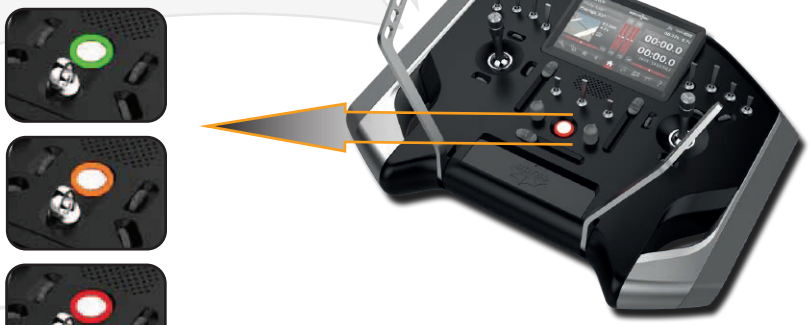
Charging during operation/flight is possible.

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.

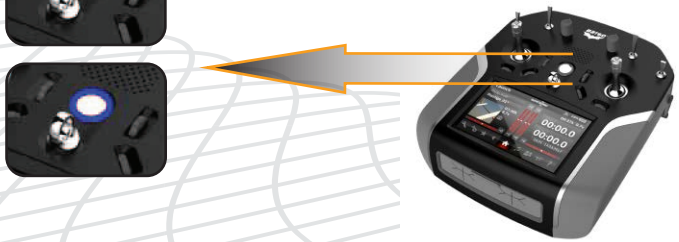
12.1. Transmitter is switched off and charging

- green: fully charged
- orange: more than 80% capacity
- red: less then 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 slow pulsing blink shows the state of the BAT 60 batteries:
  - o blue: more than 20% capacity remaining
  - o orange: less than 20% capacity remaining
  - o red: less than 10% capacity remaining
  - o 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 chapter 21.1.2):
  - o Nothing: everything Ok
  - o 1x red: backchannel threshold warning
  - o 2x red: uplink threshold warning
  - o 3x red: low receiver battery threshold warning

13. How to switch on/off

13.1. ON

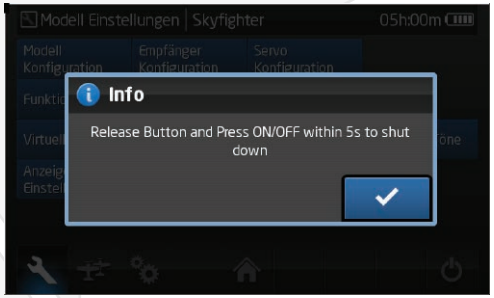
Pressing the on/off button for about 1 second will activate the BAT radio and will start the boot process of the Linux PC. The booting of the Linux will take some seconds. Nevertheless you could fly and control the last used modelmemory within a few second with all settings, Flight modes, etc.

Linux boot is finished when you see the home screen. Now you can do changes on the settings, change modelmemory, etc…

13.2. OFF

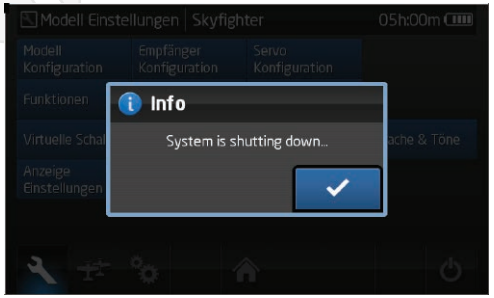
To shutdown the radio you have to perform 2 steps!

1st STEP Tab the "shutdown" symbol  at the navigation row 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.

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.



2nd STEP 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.

13.3. RESET

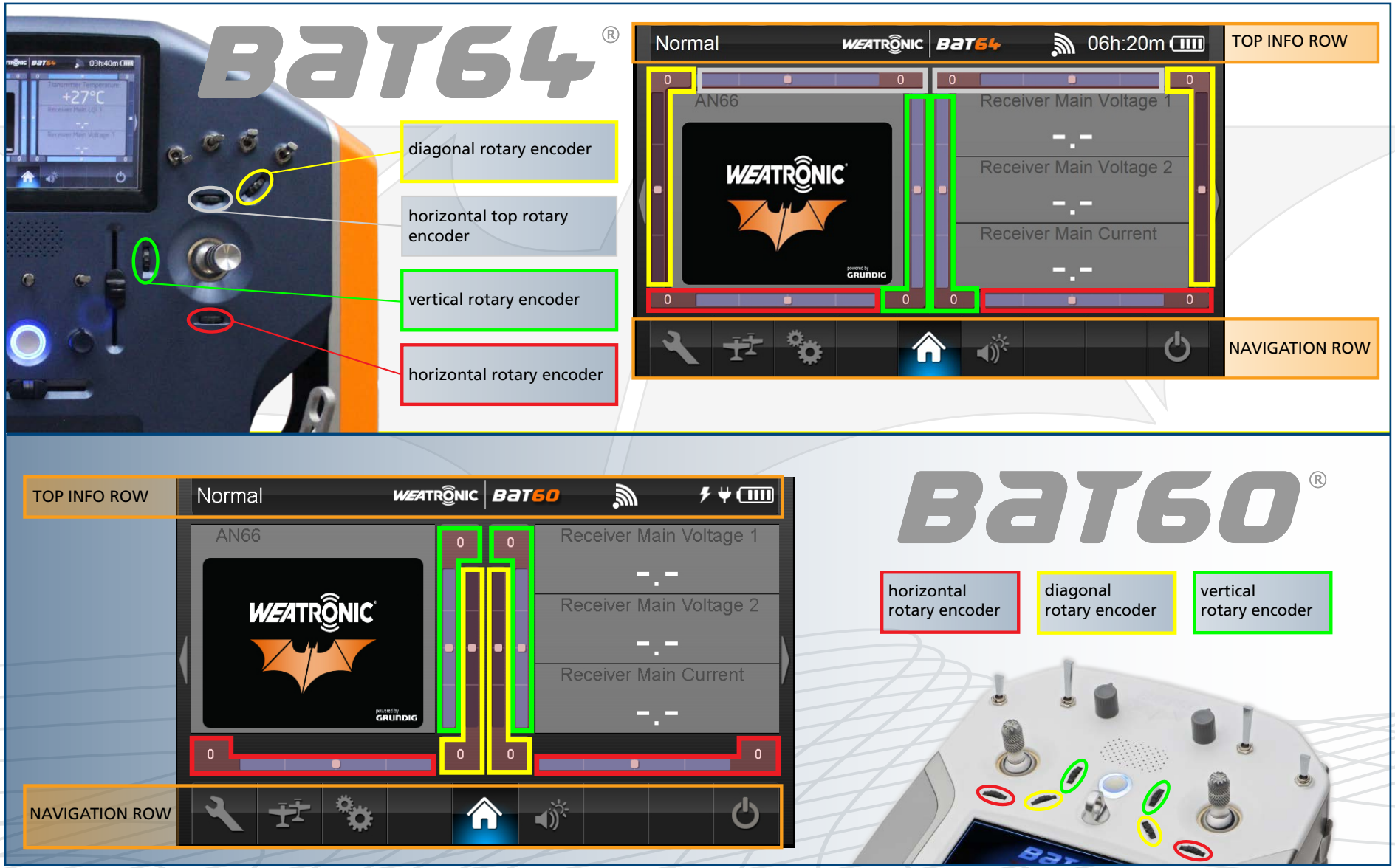
Whenever there is a problem to switch the radio off, you can do a hard reset. Please do this only in case of real need.
Press the ON/OFF button for at least 20 seconds, the LED around the button will start to flash rapidly orange.
Now release the button and the LED will change the color to Red. Now you have 3 seconds to press the button again and the BAT 60 will turn off.

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

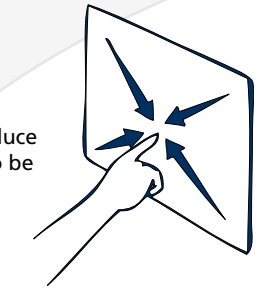
If a hard reset is performed it is possible that some of the latest setup changes are not saved and maybe discarded.

14. Interface

Here you see a screenshot of the BAT home screen. The “TOP INFO ROW”,”NAVIGATION ROW” and the rotary encoder position indicators are labeled.



Swipe left or right
to reach the telemetry screens.
Go to chapter 21.1.10
for more information.



14.1. The display

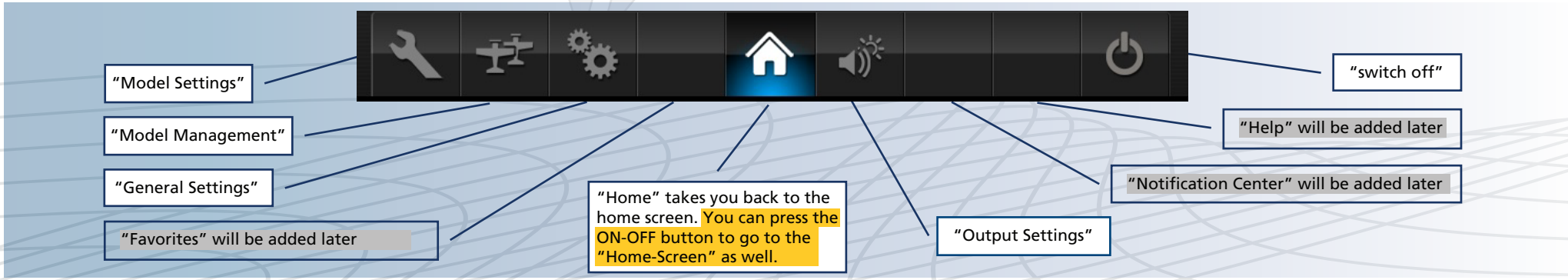
The display of BAT radio is a capacitive touch screen. This means it recognizes the presence of your finger. Pressing hard on the screen will not improve functionality but reduce lifetime. Furthermore it will not recognize any metal, wood, plastics, etc. If you don't want to use finger for touch please 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.

14.2. TOP INFO ROW

The information row on top which is shown in almost all menu screens informs you about the current model, flight mode. The battery symbol on the top right corner gives evidence about the battery status of your radio.
- If WiFi is activated you will see a connection signal strength symbol.
- If the Homescreen is locked you will see the lock symbol.

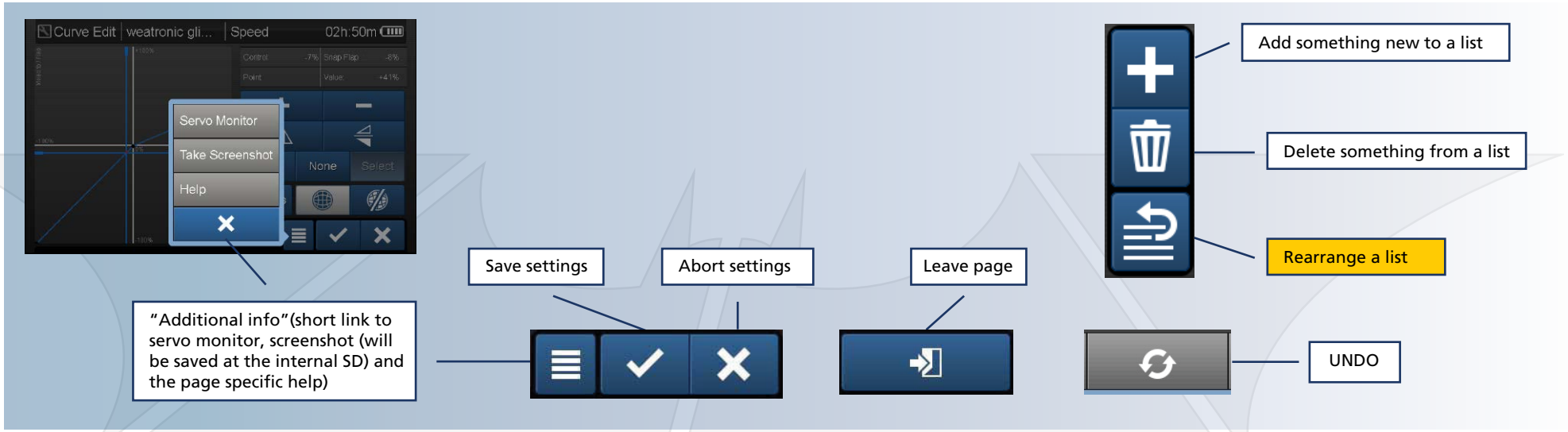
14.3. NAVIGATION ROW

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

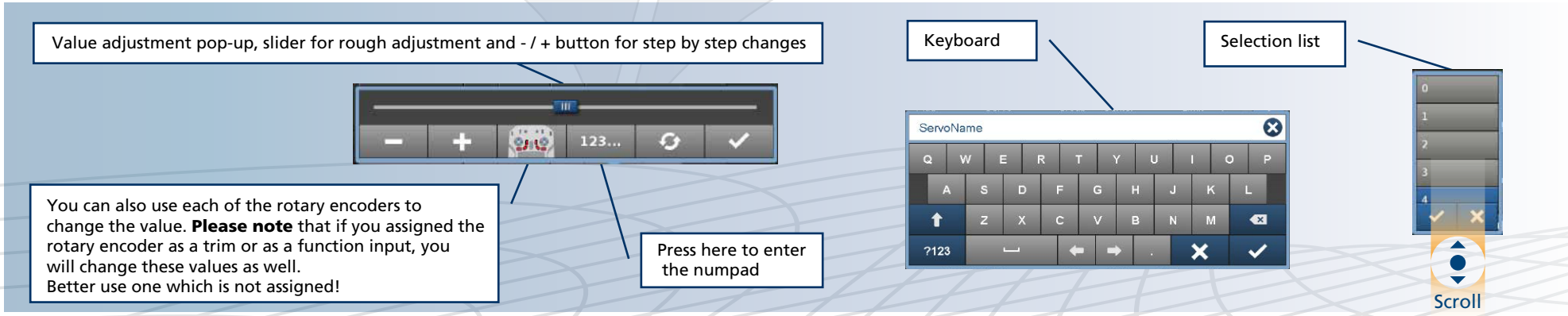


14.4. Common interface symbols

There are also some common symbols used for navigation through the interface:



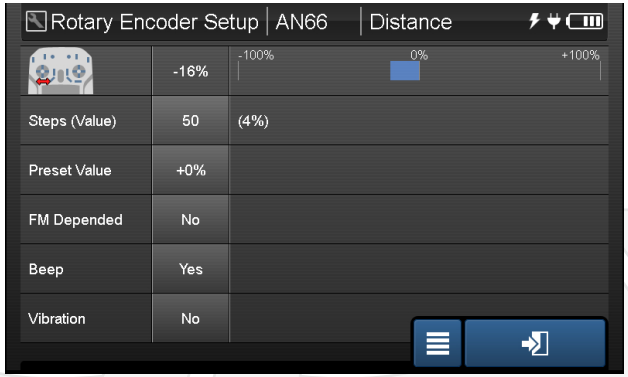
14.5. Common "pop-up" menus

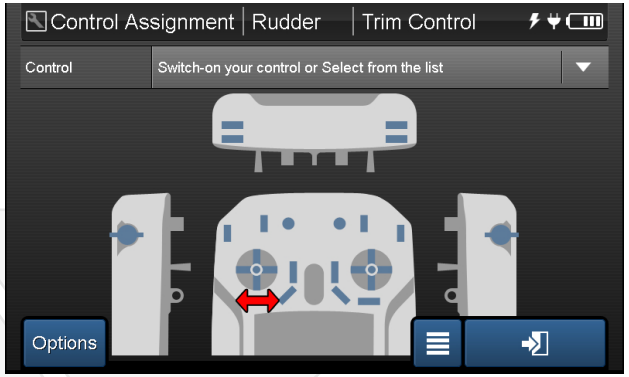


14.6. Rotary Encoder Setup

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 menue.

- On the top you see the control and the live position.
- **Steps (Value)** , adjust the steps which should be executed with one “Rotary turn click” - for example 10 steps equals 20%
- **Preset Value**, this value defines the value which you want to set if you press the rotary encoder.
- **FM Dependent**, this option let you adjust “Flight Mode” based trims - the value number at the homescreen is underlined if the rotary encoder is flight mode dependent.
- **Beep**, enable the beep if you turn the rotary encoder
- **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)





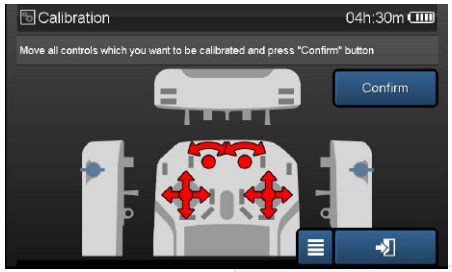
14.7. ON/OFF Button functions

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 adjustmet menu (see chapter 21.1.13)

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

15. Calibration of potentiometers, sliders and sticks



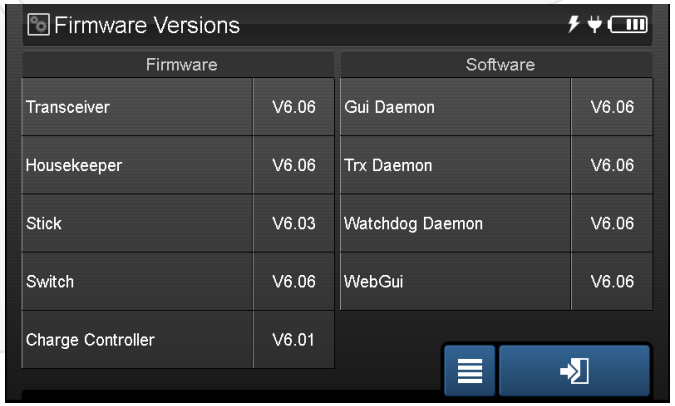
- Go to general settings -> calibration.
- Press “Start Calibration”. Now move all sticks or potentiometer to their maximum positions.
- Moved controls are shown in red and their maximum position will be adapted to +/- 100%.
- Now press “Confirm” and move the controls to their “zero” position. Also put the throttle/brake stick to the “middle” position before pressing “Stop Calibration”.
  If you are using the MA or MB “feedback part”, adjust the stick just in between the different behaviors.
- This position will be stored as 0% by pressing “Stop Calibration”.

16. Software and firmware UPDATE

16.1. Update process of the BAT transmitter

Please note that the ChargeController can not be updated. Please see chapter 21.3.1 for more information.

1. Go to our download center at our webpage (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.
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 20 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:



16.2. Update of weatronic receivers

Check the weatronic-firmware update instruction.
Please note that the BAT radio requires a matching firmware version for the receiver. Go to weatronic.com and download the current and matching one. Please visit our webpage and see the Firmware update manual, which you will find at the download section.

17. Binding process

Before binding process please check that there is a matching firmware installed to the receiver.

- To bind a receiver to the radio set the receiver to “Binding Mode”. Therefore have it in power off state, and then connect power supply. In between 5-30sec after power up plug the binding jumper to the SCU red(+) and black (-). 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 always.
- Now navigate to the Receiver Configuration menu. Choose the correct receiver type. Press “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.

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

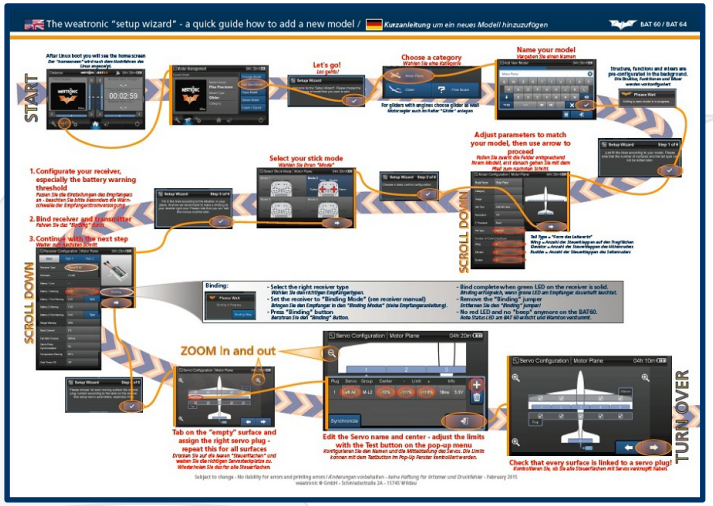
18. RC-equipment installation in your model

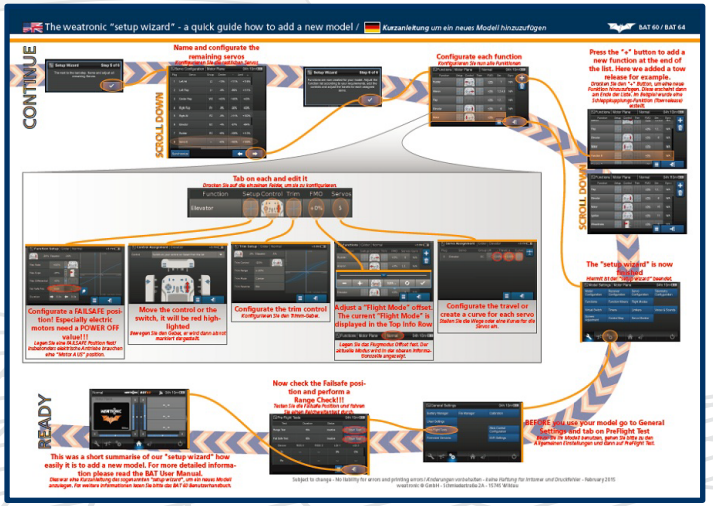
The correct installation of the receiver, battery, servos, electric cables and antennas is highly required to operate your model.
Avoid excessive vibration exposure and excessive heat load. Also make sure that your batteries are in perfect shape and that they are always fully charged. Take care about 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.

19. “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.





19.1. 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 resolution for showing and adjusting values can be set to steps of 1% or 0.5% or 0.1%.
The function preselect will define the way you get a preselected list of functions:

- None: No functions will be predefined
- Basic: all functions to setup the model for general purpose use will be predefined
- Advanced: the predefined functions will give all possibilities for expert user and highly sophisticated setup.

Then you set up the geometric specifications of your model. For helicopters this is the configuration of the swashplate and the gyro and mixing system you use. For planes the tail type or only wing configuration as well as the numbers of control surfaces.

Make sure that all adjustments are done properly because they can not be changed afterwards.
For example:

- Function Preselect,
- Tail Type,
- Number of control surfaces

19.2. 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.

19.3. 3rd step: Receiver Configuration

Here you can choose and bind the receiver (see chapter 17) for your model as well as adjust some basic setup.
We recommend that you adjust the right voltage warning especially for battery according to the circumstances in your model.
Also you can add sub receivers. They can be used as parallel receiver but also for extending the number of servo plugs.
NOTE: Only the main Rx is capable of handling additional telemetry and sensors.

19.4. 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.

19.5. 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 the setup wizard, a model with all functions according to your settings will be created. Now please adjust the travels for each function and each servo.

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.

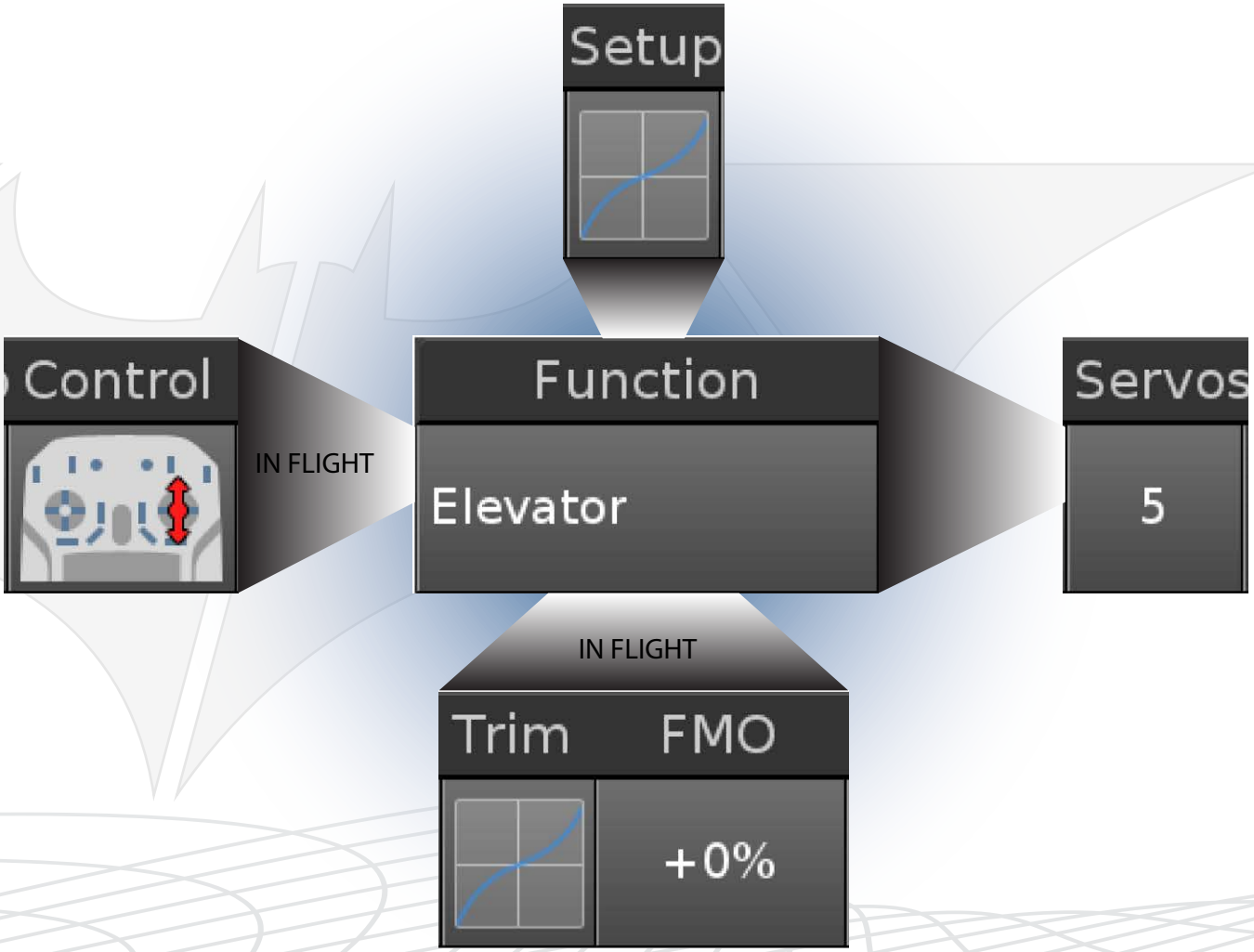
Also you can modify your functions with all the assigned servos under function setup. There you set up values like

- Flex Rate (flexible "DUAL RATE")
- Flex Expo (flexible "EXPONETIAL")
- Flex Differential (flexible "DIFFERENTIAL")
- curve edit (33 points)

(NOTE: for correct function of differential your servos need to have correct L(eft) 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, if you use an electric motor.

When necessary you can add a Trim or a constant (flight mode-) offset (FMO)



21. Programming Menu structure

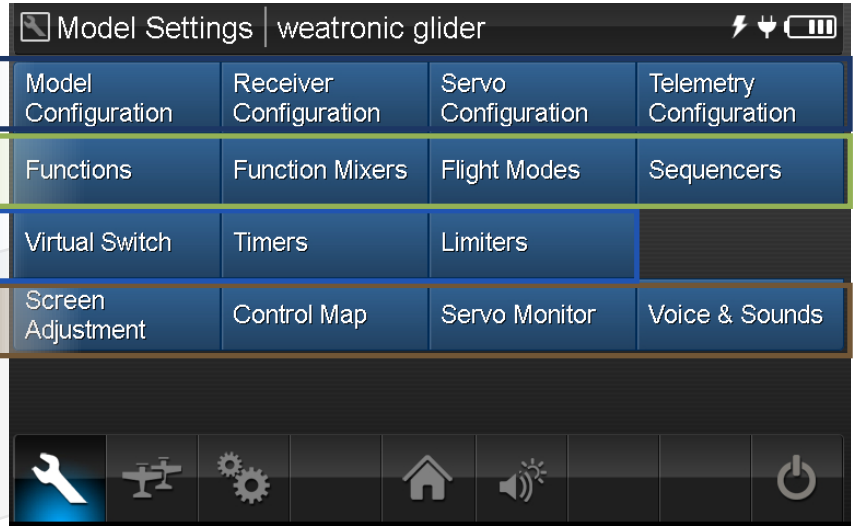
The menue structure is divided in 4 main programming parts, the **"Model Settings"** , the **"General Settings"** , the **"Model Management"** , and the **"Output Settings"** .

21.1. Model Settings

Tab on the wrench at the very left end of the navigation row. You will see 14 menu points:

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 go to 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:** Link Vario 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.
- **Sequencer:** Gives you the amazing possibility to realize fully customizable sequenzed servo movement patterns.

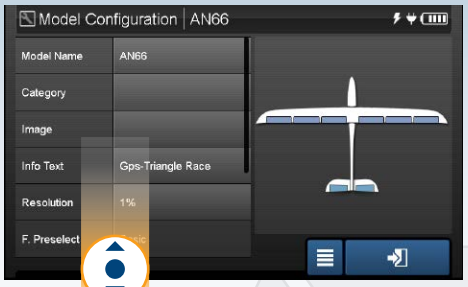
- **Screen Adjustment:** This menu allows you to fully customize your home screen and to add telemetry screens.
- **Control Map:** Information about all servos and their relation to each function.
- **Servo Monitor:** Here you see all servo position and movements.
- **Voice and Sounds:** Voice Output setup for thresholds and warnings

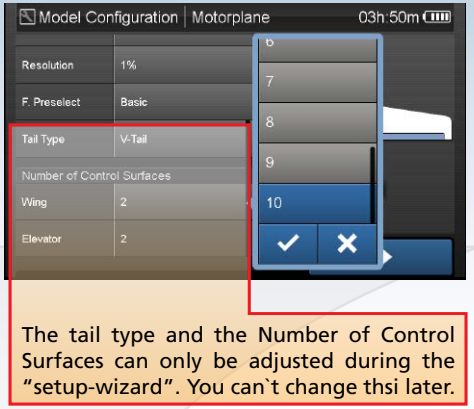
- **Virtual Switch:** Combine 2 controls to create virtual switches.
- **Timers:** Add timers like you need them.
- **Limiters:** Here you have the possibility to limit functions, which gives you a really needful safety feature.

21.1.1. Model Configuration

Model Configuration

- **Model Name,** just tab and use the keyboard to enter the name
- **Choose a Category**
- **Choose an Image ,** *.jpeg max. recommended resolution : 500x500 pixel. You can only choose pictures from the internal image folder. Use the "file manager" (chapter 21.3.2) to copy pictures from a USB stick to the internal image folder. PLEASE NOTE: select the picture by DOUBLECLICK
- **Info Text,** do some notes regarding your model
- Choose the **Resolution**: 0.1% or 0.5% or 1%, all values during programming this model will be
  - o very fine (0.1% = 4000 steps) or
  - o middle (0.5% = 800 steps) or
  - o normal (1% = 400 steps)
- **F. Preselect**, None or basic or advanced function preselect (chapter 19.1.)
- (*) **Tail Type**: Normal or V-Tail or Delta
- (*) **Number of** (really moving) **control surfaces** is visualized by the graphic on the right.





The tail type and the Number of Control Surfaces can only be adjusted during the "setup-wizard". You can`t change thsi later.

21.1.2. Receiver Configuration

Receiver Configuration

Main and Sub receivers: here you can add 2 more receivers as sub receivers. Please note, that only the main Rx is capable of handling additional telemetry and sensors. PLEASE NOTE THE ADDITIONAL INFOS REGARDING THE GIZMO RECEIVER!

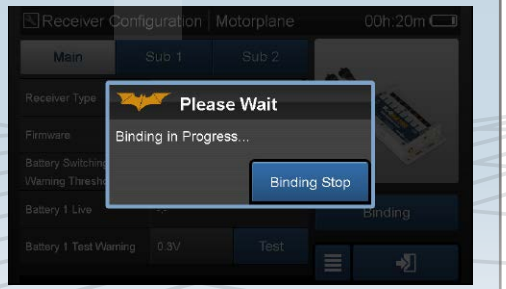
- **Receiver Type:** choose the correct receiver type, it is shown in the picture. (Tiny, Clever, Smart, Micro, Gizmo).
- Display of the **Firmware** version of the receiver if connected.
- The **Battery Live** shows the voltage of the receiver power supply.

- **Battery Warning** threshold,
  please adjust the right threshold according to the battery used for the power supply of yourmodel.
  The radio will give you a warning (3 x beep and simultaneous red LED blinking) by reaching the threshold.

- **Range Warning** threshold
  The radio will give you a warning (2 x beep and simultaneous red LED blinking) by reaching the threshold.

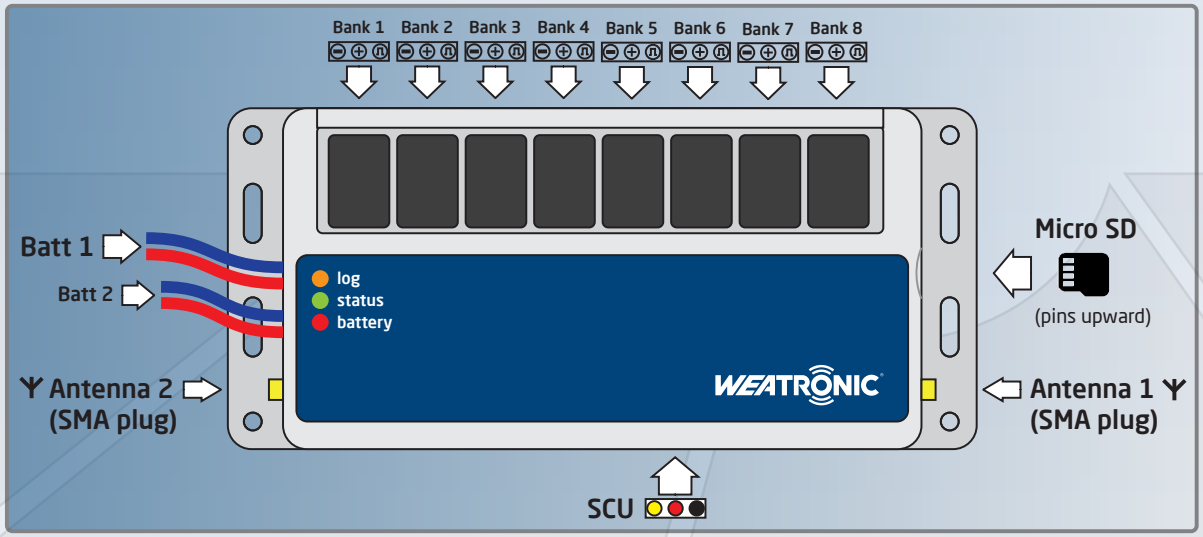
- **Back Channel** warning threshold
  The radio will give you a warning (1 x beep and simultaneous red LED blinking) by reaching the threshold.

- **Fail Safe Timeout**, whenever there is no connection to the radio, the receiver will adjust the "failsafe" position after this timeout.
- **Sum Signal Output**, NOTE: normally the last physical plug is used as output (for example at Tiny 5 uses plug-5 and the Smart 8 uses the plug-8).
- **Is Sum Signal Off While Fail Safe**
- **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 of the receiver.
- **Temperature Warning** threshold
- **BINDING** button, press here to start the binding process. The BAT 60 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.



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), depending on the situation the switching can take some millisec-onds. The 1x flashing red LED at the receiver / switching board indicates that the battery 2 was at least once in use.
- 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 dropdown is set to 0.3 Volt. We recommend to exchange the battery if the dropdown is higher. The permanent red LED at the receiver / switching board indicates that the test did not succeed.

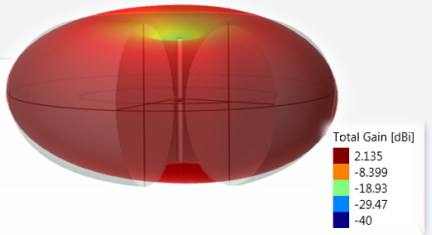
21.1.2.1.3. Servo banks

- 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 bank still all the others 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 (see chapter 21.1.3), scroll a little right and you will see the voltage column. Tap and select the voltage.

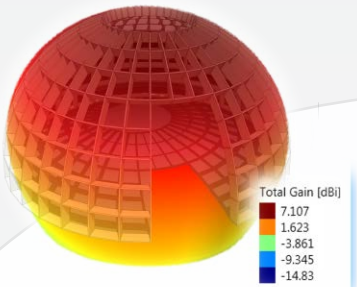
21.1.2.1.4. Antenna alignment

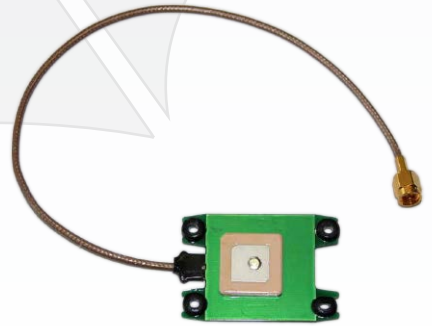
- The gizmo receiver is a dual receiver and you can connect two antennas. The connectors are standard SMA so please screw them handtight! Don`t use any wrench or plier, as the thread can be easily damaged. Also you can put extensions cables, check our webshop. There are several different length available.
- 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.

conventional dipole stud antenna



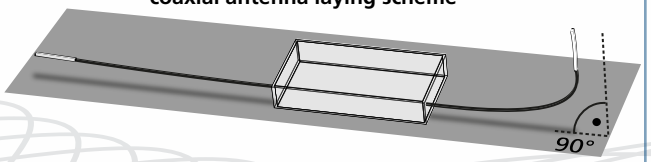
weatronic patch antenna





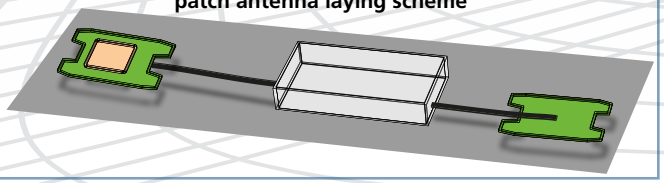
- If you use the standard **coaxial antenna** please consider that only the last 29mm are the active parts. Both antenna cables must be laid without kinks and the bared part has to be placed as far away as possible from all metal or conductive parts. Carbon fiber reinforced hulls, hulls with metal-finish 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.

coaxial antenna laying scheme



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

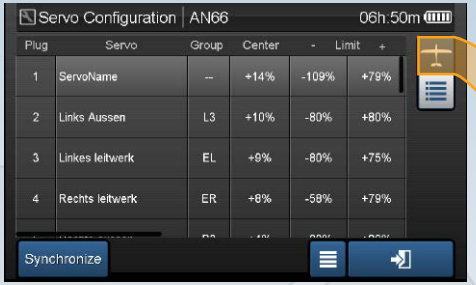
patch antenna laying scheme



21.1.3. Servo Configuration

Configuration
Flight Modes

There are 2 different views for this screen. Tab on the top right button to switch between the 2 views.
(NOTE: the 4 screenshots at the bottom are showing the “setup wizard”).



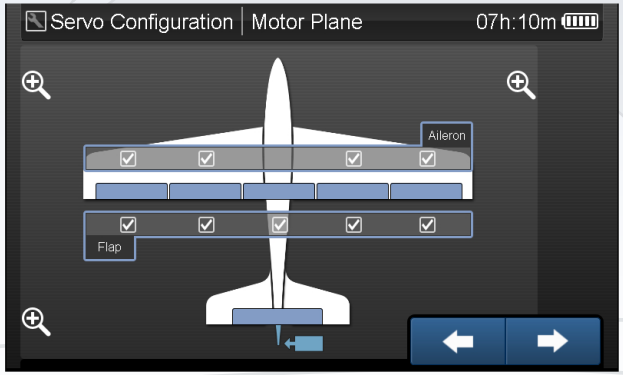
The **“list view”** shows all servos according to the type of receiver.
Here you can name the servo, adjust the center and the limits.

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.

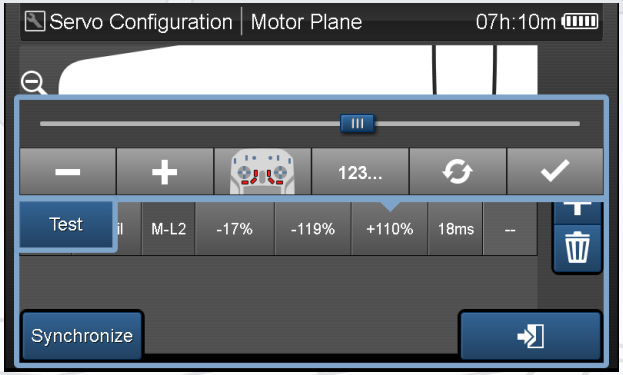
The **“graphic view”** shows the model top view and allows the “setup wizard” to create functions accordingly. You can always change the assigned servo plug, but be aware that the values for center and limits are reset to default.

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. By pressing 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 and make sure that the servo is not blocking at the limit positions. The limits are fixed, which means the servo will never move beyond.

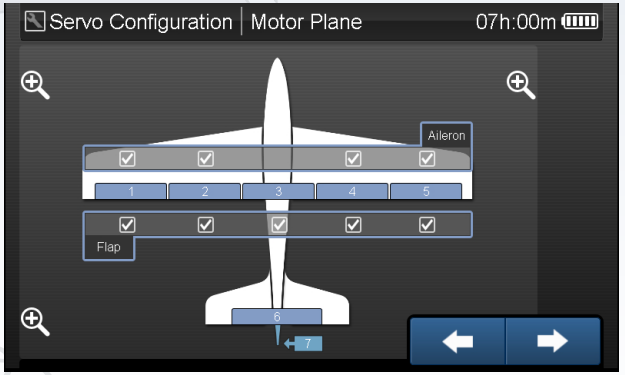
Use the zoom buttons to navigate to the surface you want to adjust. As a default all wing surfaces are assigned to the aileron and flap function, but you can uncheck.



When you enter the screen the first time all surfaces are empty, no servo plugs are assigned.
Tab on the blue surfaces if you want to assign servos.

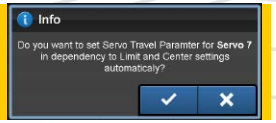


1. Press on the PLUS symbol and choose a servo.
2. Tab on the center or limit values to adjust the values.
3. The test button will slowly move the servo position towards the limit value.



After you assigned a servo plug you see the plug number at the surface.

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 cuztomised travel values will be overwriten, 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.



21.1.4. Telemetry Configuration

Telemetry Configuration

At the moment you only see the Vario Configuration and the Bluetooth Configuration .
There will be more options with upcoming software updates.

21.1.4.1. Vario Configuration

Tab on the vario configuration button and you enter the Vario Setup. The setup is seperated in two topics:

- **Sound Configuration**, shows an overview about the vario sound behaviour.
  - o First you see the live value of the **height (AGL)** and the **climbrate** in the first row. This is only for your information.
  - o Now you can adjust the vario tone to thresholds.
    - The first row shows the the values for the climbrate in **meter per seconds**
    - the second row indicates the frequency of the vario **tone in Hz**
    - and the bottom row is the tone type: **continuous or slow beeping or fast beeping**
  - o We offer some recommended values, but of course this is totally personel taste and you can adjust to your own needs:
    - the old DV4 - LinkVario setup without compensation of the glider sinkrate:

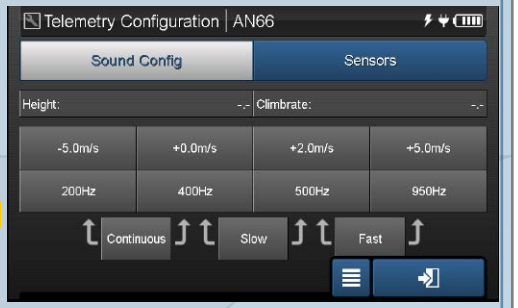
-5.0m/s	+0.1m/s	+1.5m/s	+5.0m/s
220Hz	440Hz	640Hz	1350Hz
Continuous		Slow	Fast

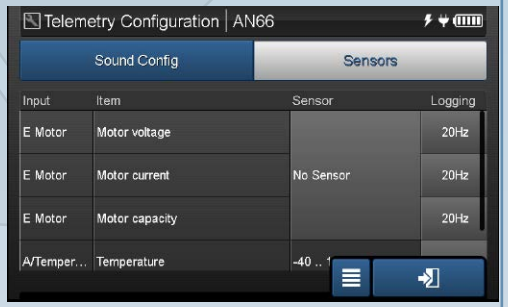
- the old DV4 - LinkVario setup with compensatin of sinkrate:

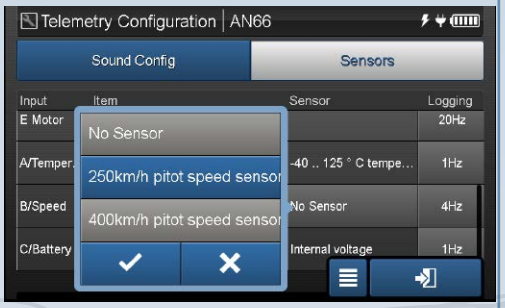
-5.0m/s	-0.8m/s	+0.0m/s	+5.0m/s
250Hz	450Hz	650Hz	1250Hz
Continuous		Slow	Fast

- **Sensors**, is the setup and configuration option of all attached sensors to the Link Vario
  - o **Input** is the physical sensor plug at the Link vario, some of these inputs have to configurated, some not.
    - A = temperature
    - B = speed
    - C = power supply
    - CURRENT SENSOR

  - o **Item** names the sensor or the calculated telemetry option, only information
  - o **Sensor**, here you have to assign the
    - current sensor (current sensor SM 20, SM 80, SM 150, SM 400) which is attached to the Link Vario.
    - preset for the true airspeed sensor (max. 250km/h or max. 400km/h)
  - o **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)

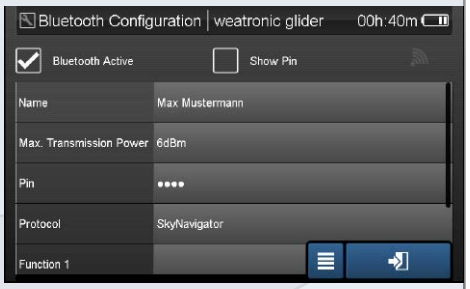






The GPS unit can be also attached to the Vario but it is only plug and play. Please consider that the GPS and the GPS-Pro module have different ways how to connect.
- The GPS-Pro is connected between RX and Vario. Please refer to the GPS - Pro Manual for more instructions.
  http://www.weatronic.com -> 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 vario!

21.1.4.2. Bluetooth Configuration (available since Software Version 6.06)



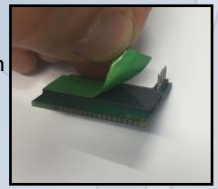
Here you can set your bluetooth modul for each model independently, on the top of the menu you see the checkbox to acivate the Bluetooth and another checkbox if you want to see the Pin. Also you see a tiny signal strength symbol on the right. You can set the Bluetooth active and inactive for each modelmemory separately.

- **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 telemetrie backchannel could be influenced if the bluetooth transmissiopower is set to higher output.
- **Pin:** choose a pin, mostly this is only needed for the SkyNavigator app.
- **Protocol:** select a protocol from the list.

How to install the BLUETOOTH CHIP HARDWARE to your radio:

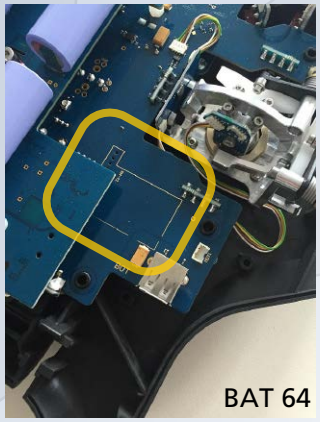
1. Carefully unpack the Bluetooth chip. Take care about the 4 connector pins.

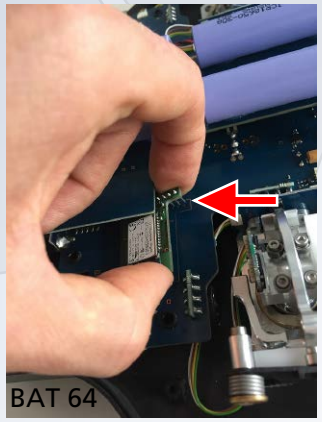
2. Open your radio (chapter 7) and place it in front of you.
3. Prepare the bluetooth chip and remove the green coversheet of the doublesided foam tape at the bottom side of the chip.

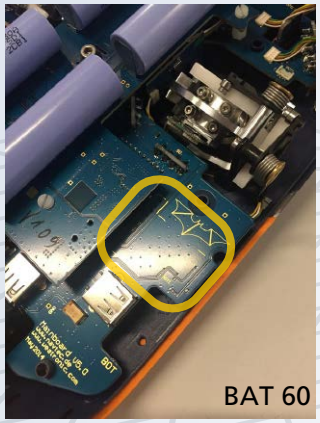


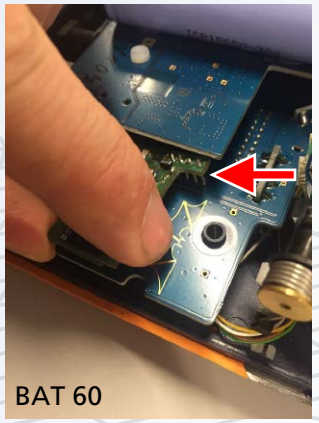
4. Clean the area where the chip will be placed. Use a soft and dry tissue if needed. (yellow marked area)
5. Carefully plug the bluetooth chip to the coresponding plug on the mainboard. (RED ARROW)
6. Gently press the chip down for a little while. The double-sided foam tape will now stick to the mainboard.
7. Close the radio (chapter 7)

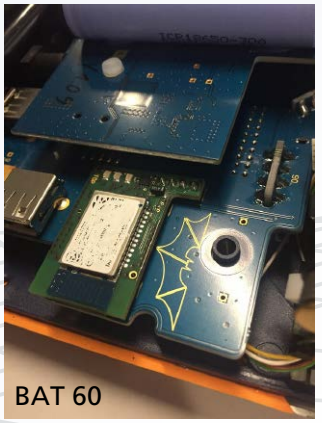
Some early mainboard versions (only applies for BAT 60 - before mainboard version V5) are not equipped with a plug for the Bluetooth chip. Please contact our support if you have this kind of board.







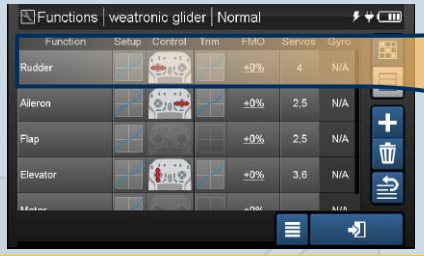




21.1.5.Functions

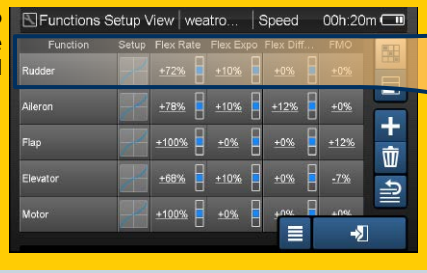
Functions

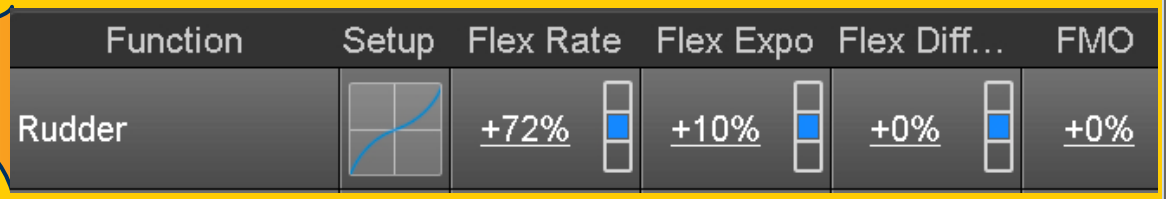
This is the main menu to set up your model functions, read chapter 20 about the idea behind the weatronic programming philosophy.



"Normal View", here you see the standard "Function List" view

Use this Buttons to alter between the "Standard view" and the "Setup View"



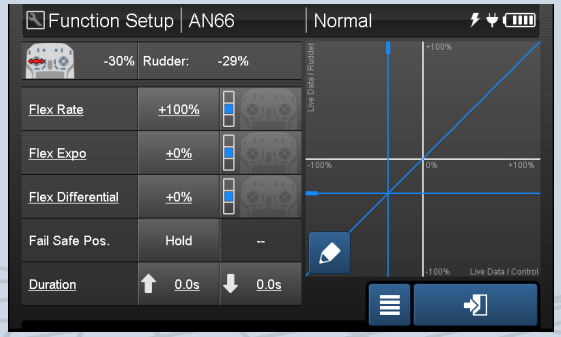


"Setup View", here you see the "Flex Rate" the "Flex Expo" the "Flex Differential" and the "Flight Mode Offset"

21.1.5.1. Function name

Choose a name for the function, just tab on the name. A keyboard will pop up to change it.

21.1.5.2. Function Setup



21.1.5.2.1. Flex Rate
Here you can adjust a gain to the function; also you could assign a control to change the value.
If you assign a poti you could change the value seemless during flight.

21.1.5.2.2. Flex expo
Here you can assign an exponential gain to the function. Also you can assign a control to change the value.

21.1.5.2.3. 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 links the L(left) R(right) attribute automatically.

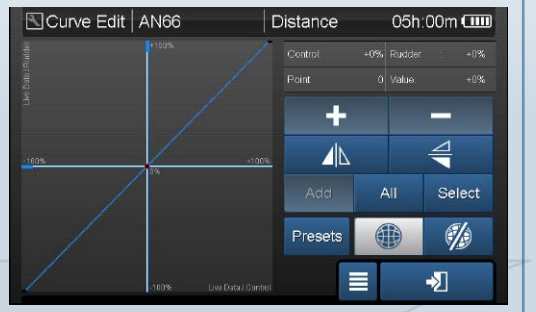
21.1.5.2.4. Fail Safe Pos.
The Failsafe Position is stored inside the receiver and defines the routine whenever there is no valid transmission signal coming from the radio. The "hold" will keep the last transmitted position. Choose between a value or "hold", we strongly recommend to adjust a proper position for all functions. You will see the "value" as a red line at the right graphic.

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

Check the failsafe before each operation of your model!
Go to general settings and make the Pre-Flight test, read chapter 21.2.4.2.

21.1.5.2.6. 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 smallgrey 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.



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


- Tab on the "**Presets** " button and choose on of the predefined curves.
- Choose "**Global**" or "**Non-Global**" for this curve. The activated state is marked with as a "white button":
  - "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 

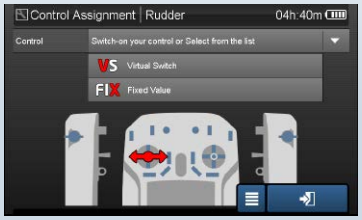
- **Add points (only grey dots):**
  - Move the crosshair with the assigned control close to a grey small dot you want to select. Then press the "Add" button and you will see that the point is marked red.
- **Move points (all red points):**
  - You can change the position of red marked point. It doesn't 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 rotary encoder 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.
- **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 tabing on it.

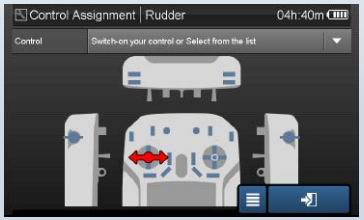
- **Unselect points (only red dots):**
  - Move the crosshair above a red dot and you will see the "Unselect" button. Press it and the red dot will turn black.
  - By pressing the "None" button all red dots will be deselected and will turn black.
- **Delete points (only red dots):**
  - Move the crosshair above a red dot and you will see the "Delete" button. Press it and the the red dot will be deleted and turn grey.

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 red.

21.1.5.3. Control Assignment

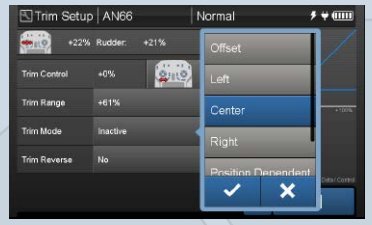


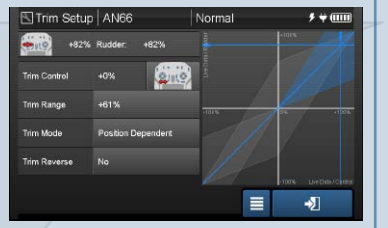


Just move the control which you want to assign or tab it on the screen. There is also a dropdown menu with more options.

- Virtual switches: to create virtual switches see chapter 21.1.8
- Fixed value: choose a value between -100% and +100% as a fixed input value for this function.

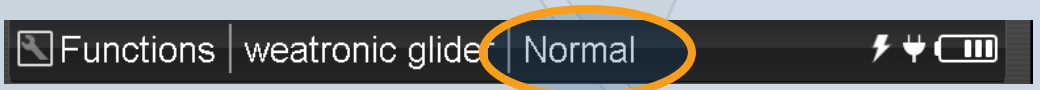
21.1.5.4. Trim Setup





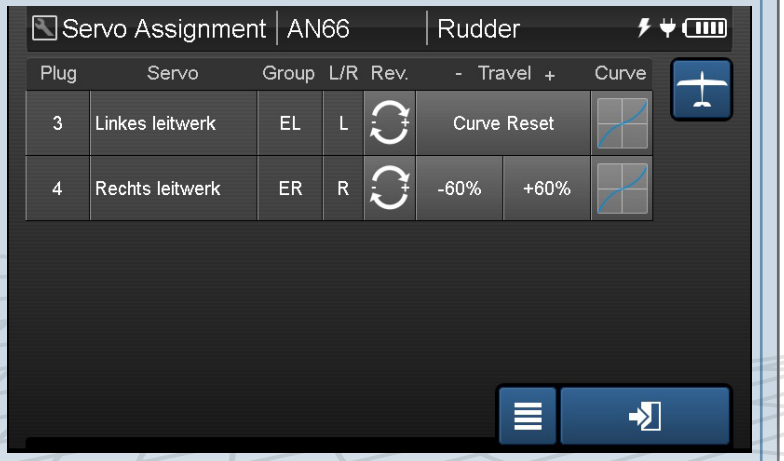
- **Trim Control**: live value and control assignment
- **Trim Range:** Adjust and also visualized in the graphic
- **Trim Mode:** Choose between offset, left, right, center or position depended. Check the graphic for information about the characteristics. The blue highlighted area is the current trim area.
- **Trim Reverse:** If you reversed the direction of the function by the function setup curve and not with the servo travel (servo assignment menue 21.1.5.6), you have to reverse the trim as well!
- The graphic on the right shows the trim behavior and the range.

21.1.5.5. FMO (Flight mode offset)



Change this value for each flight mode, the actual flight mode is displayed in the top information row. See chapter 21.1.7 for creating and assigning flight modes. The flight mode "Normal" is the default mode.
PLEASE NOTE: all options and values which are underlined are "flight mode dependend"

21.1.5.6. Servo Assignment



- Physical **plug** number at the receiver, only for information
- **Servo** name, only for information (hint: go to servo adjustment for editing the name)
- (*) **Group**, first letter is M (master) or S (slave) and second letter is the group (in alphabetical order), if handled by graphic view the location is shown like the example in the picture.
- (*) **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.
- **-Travel+**,
  here you can adjust the 2 end point values **for only this servo and only for this designated function.**

  Use the Rev.  (Reverse) button to easy interchange the - and + travel.

  The normal "-Travel+" is deactivated if you adjust a curve. By pressing "Curve Reset" you delete the curve and the 2 end point values can be adjusted again. The last known value will be restored.

- **Curve**, here you can adjust a 33 points curve for each servo.
- Servo Configuration Graphic view button  , go there if you want to change a servo plug for this function.

If you created the function manually you will see the common "+" add and "trash" remove button.

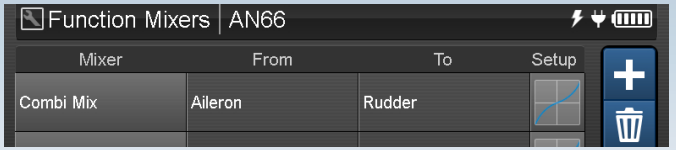
21.1.5.7. Gyro

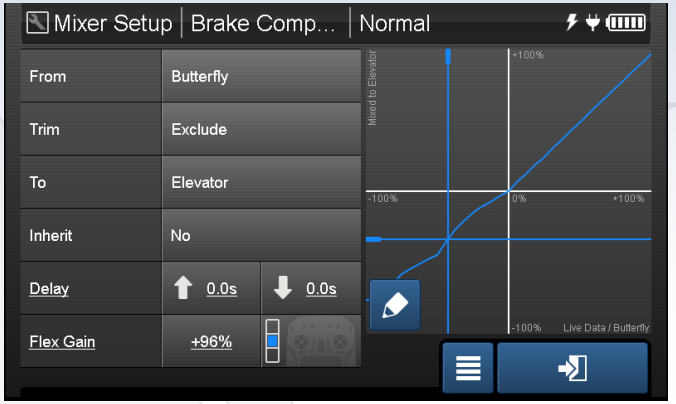
coming soon

21.1.6. Function Mixers

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 configurate the mixer.





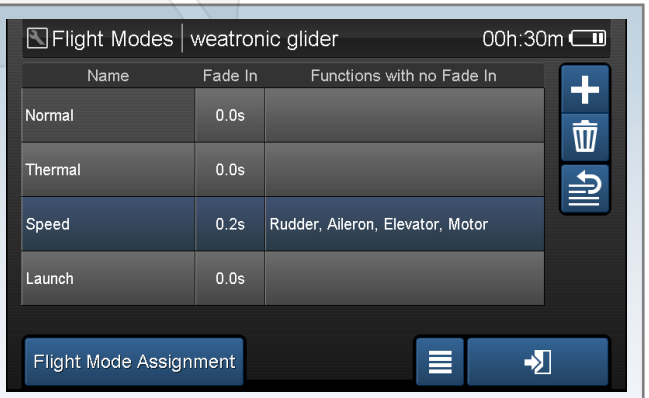
- **Mixer** name, tab and name it
- See the **From** function and **To** function information

- Mixer **setup:**
  - **"From"** function, the function which is the "input"
  - **"Trim"**, exclude or include the trim , if there is one assigned to the "from function"
  - **"To"** function, the function which is related to the "input"
  - **"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". Be aware that circular relations and unforeseen movements can be caused, so please use this option only if needed
  - **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" seemless.
  -  **Curve Edit**, after you created a specific curve the "**Flex gain"** value acts like a gain to this curve.

21.1.7. Flight Modes

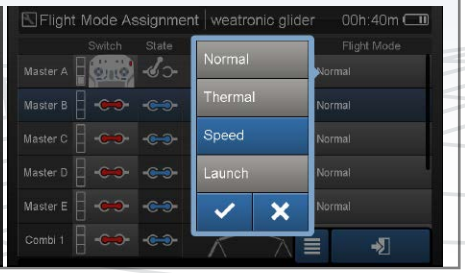
Flight Modes

Flight modes are useful whenever you want to change the overall adjustments of the model in relation to different situation during operation. Press the plus to add a flight mode. The blue shaded mode is active.



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 flightmode dependend.

- Flight Mode **Name**, tap to edit
- **Fade in**, the time 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.
  There are 5 **master** switches and 3 **combination** switches.
  - **Switch**, tab and assign the switch also there is a visual indication for the "ON" position of the assigned switch
  - **State**, check the actual state of the switch (only for 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.
  - **Flight Mode**, just click on the box and choose the flight mode from the pop-up.

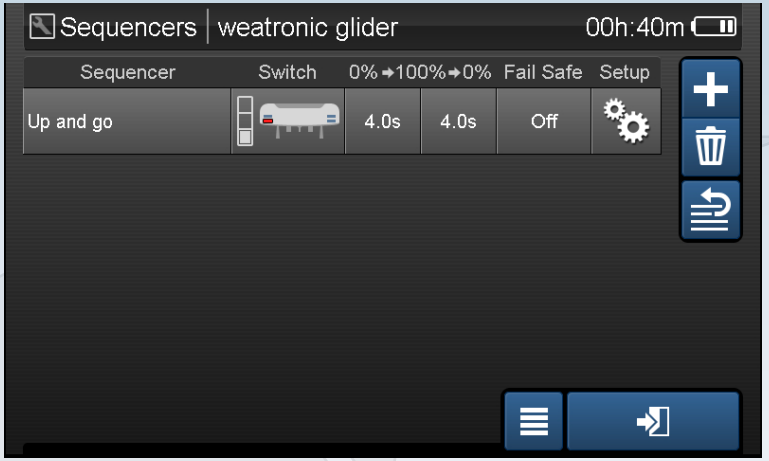


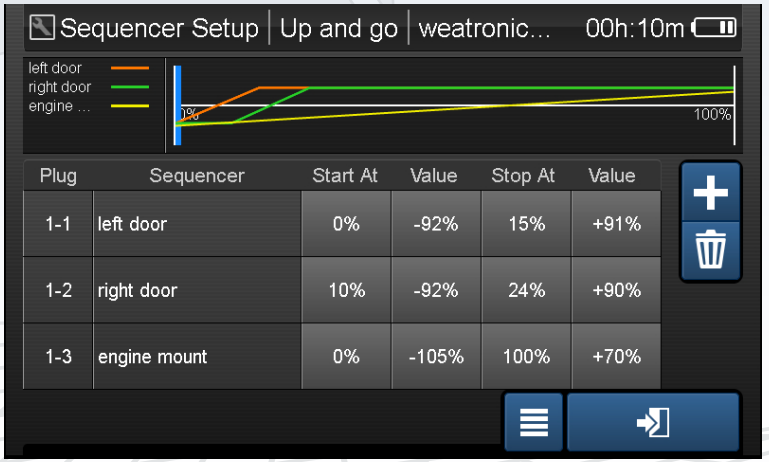
21.1.8. Sequencers

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 sequenzer information is stored inside the receiver - for maximum safety.

- **Sequencer** name, tab and name it
- **Switch**, tab here and choose the switch at the switch assignment menu.
- **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%)
- 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.
  - 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 this servo “curve”.
  - **Plug,** the phisical plug number at the 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".





- 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.

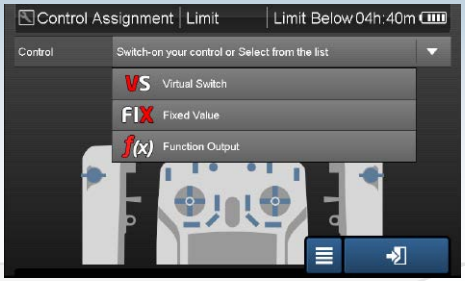
21.1.9. Virtual Switches

Virtual Switch

Press on plus to add a new virtual switch,

- **Name** the virtual switch
- check the **State** of the switch
- change the **Logic**, AND or OR
- choose the **Controls** which should be involved. The position (as soon as you leave the control assignment menu) of the control will be applied as the threshold value.
- adjust the threshold **Value** for the controls
- **Inv.** , you can reverse the control input

Now you can find the virtual switch under the dropdown menu at some „control assignment" or "switch assignment" menu screens.



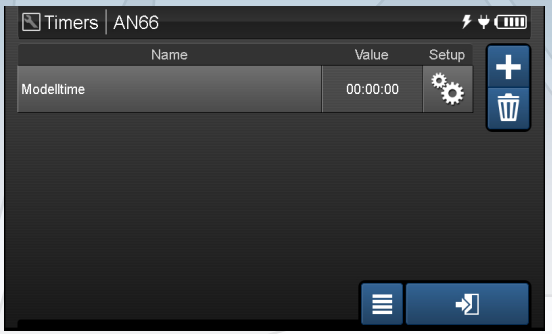
21.1.10. Timers

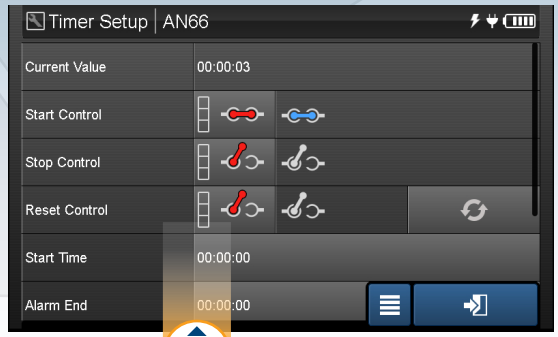
Timers

Create timers to your personal needs, press plus to add a new timer. Tab the setup symbol to enter the timer configuration screen.

- **Name:** tab and edit the name of the timer
- Current live **Value** only for information
- Timer **Setup**
  - Current **Value** as information
  - Choose a **Start Control**, **Stop Control** and **Reset Control**
  - Adjust the **Start Time**, if zero the timer counts up
  - Adjust the **Alarm End** time.
  - Choose the **Alarm Duration** time
  - Set the **Alarm Type**, beep, vibration and voice is available

After creating a timer you can find this timer at the screen adjustment menue (chapter 21.1.12) and assign it to your home screen.





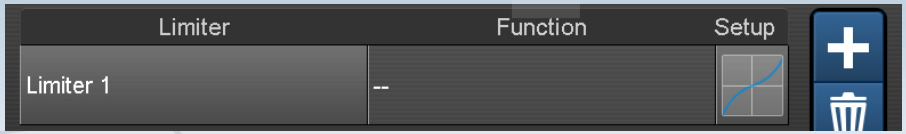
Scroll

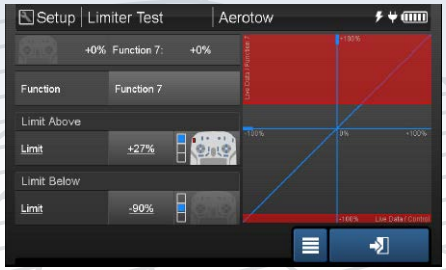
21.1.11. Limiter

Limiters

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 more switch.

- **Limiter** name, tab to edit
- **Function**, here you see the affected function
- **Limiter Setup**
  - Check the live value of the function control on the left and the function value on the right.
  - **Function**, tab here and choose the function you want to limit
  - **Limit Above**, adjust the value and/ or choose a control to change the Limit value form above
  - **Limit Below**, adjust the value and/ or choose a control to change the Limit value form below
  - **Graphic view** which shows the limits as red area





21.1.12. Voice & Sounds

Voice & Sounds

The Voice & Sounds menue provides you the opportunity to set each telemetry value as a frequent announcement or a warning.

You can create up to 8 different sound modes. Each of this soundmode 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.

You have to copy (use the file browser) 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.

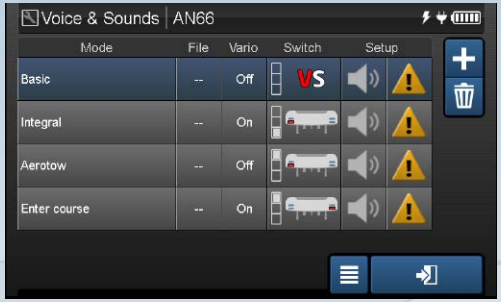
- **Vario**, choose if you want to hear a vario tone at this sound mode. Only applicable if there is really a Vario attached.
- **Switch**, tab and assign a switch to activate the mode.
- **Setup**, there are 2 different kind of setups:

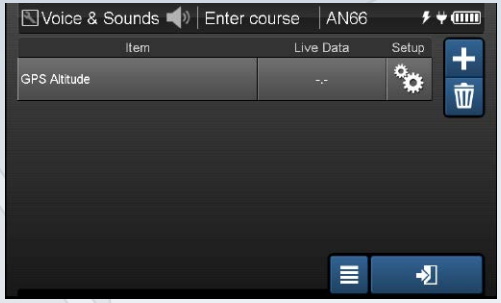
Normal,
tab the loudspeaker symbol to enter, press the plus button and select the telemetry data. The list shows all selected telemetry items. Also you see all the live values.
Press the setup button to configure the voice announcements:

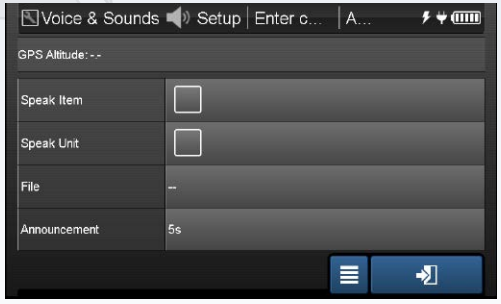
- o The first row shows the item name and the live value.
- o **Speak item**, if checked, the name of the item will be spoken before the value.
- o **Speak unit**, if checked, the unit of the item will be spoken after the value.
- o **File**, tab here and you will see a pop-up. Choose the ".wav" then 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.
- o **Announcement**, choose the repeat rate of the announcement

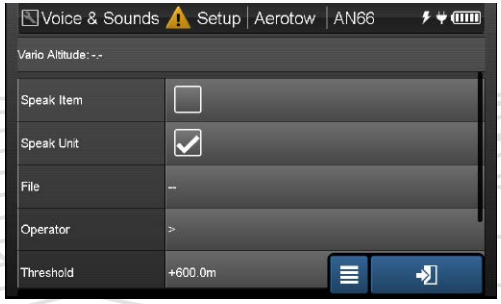
Warnings,
tab the yellow exclamation point sign to enter, press the plus button and select the telemetry data. The list shows all selected telemetry items and you can see the live data.
Tab the setup button to adjust and configure the warning parameters:

- o The first row shows the name of the selected telemetry item and the live value.
- o **Speak item**, if checked, the name of the item will be spoken before the value.
- o **Speak unit**, if checked, the unit of the item will be spoken after the value.
- o **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.
- o **Operator**, choose the operator. For example if you choose "<" the warning will be triggered below the adjusted threshold.
- o **Threshold**, set a value to trigger the warning.
- o **Alarm type**, select from the pop-up. Multiple selection is possible.
- o **Repeat,** choose continous or up to 4 times repeat.







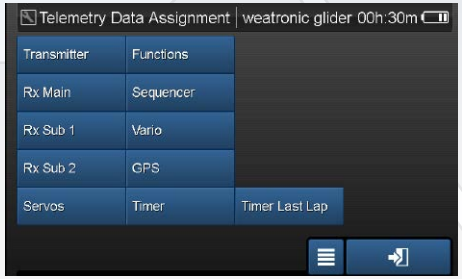


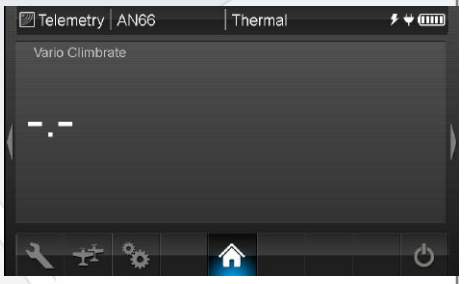
21.1.13. Screen Adjustment

Screen Adjustment

Create and customize your home and telemetry screens, if you swipe left or right at the „home screen“, you change between the screens

- **Home Screen,** here you can customize your homescreen and select different layouts,
  - Time to lock the touchscreen, this only applies for 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.
  - Auto dim of LCD screen, if enabled the screen will be switch off when the Home Screen is locked.
  - Layout, tap on the boxes and choose what kind of telemetry or timer you want to see as live data
  - Layout presets, press and choose one of the layouts
- **Telemetry**
  - Press plus to add a telemetry screen
  - Choose the layout
  - Tab on the empty containers and choose what specific telemetry data or timer you want to see.
  - Go back to the home screen and swipe left or right to scroll trough the screens



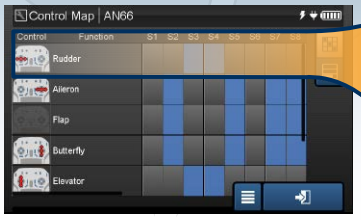


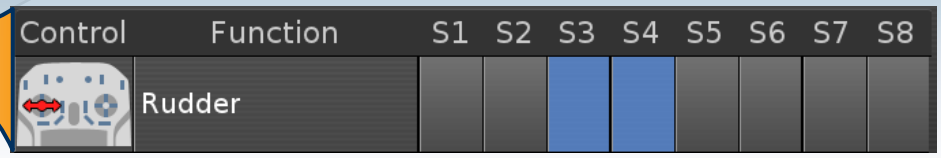
21.1.14. Control Map

Control Map

The matrix which shows each servo and each function and like they are related to each other.

Scroll down or right to see more functions and servos.



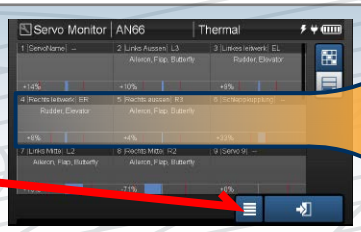


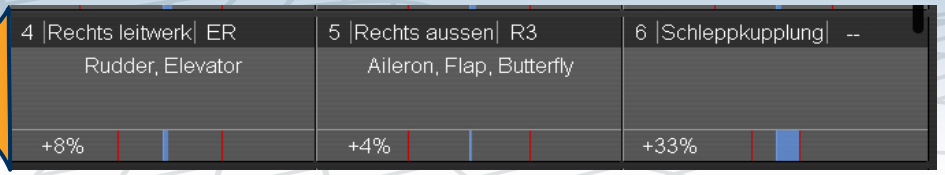
21.1.15. Servo Monitor

Servo Monitor

Live view of each servo position

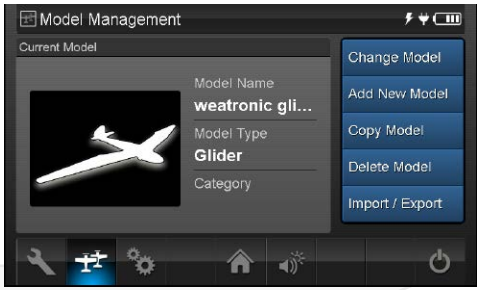
This symbol always provides a shortcut to the Servo Monitor.





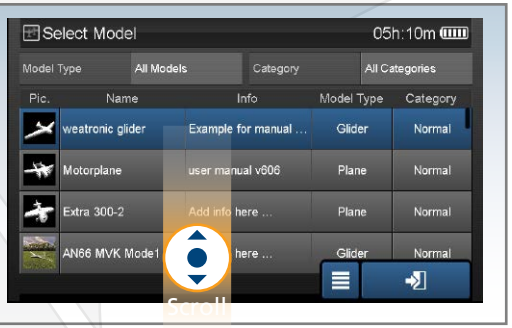
21.2. Model Management

Tab on the symbol with the two planes between the wrench and the gears. You will enter the model management menue and you will see some general info about the current model on the left and some options on the right.



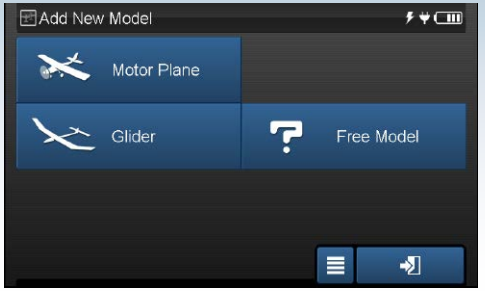
21.2.1. Change model

Scroll trough the list and select the model you want to change to.
You can apply a filter on the list by category or model type.



21.2.2. Add new model

This will start the “setup wizard” see chapter 19.
Please also study and use the printed “Quickguide” which was delivered with your radio.

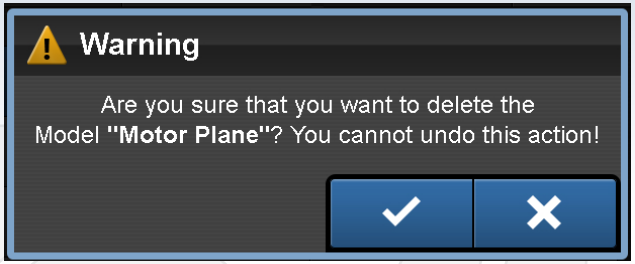


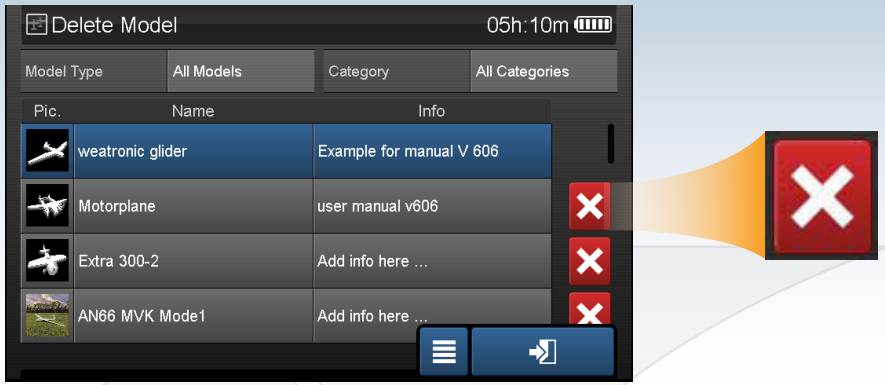
21.2.3. Copy model

Tap on the right symbol to copy a model memory. Please name the copy.
We recommend to make frequent safety copies of your modelmemories.

21.2.4. Delete model

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, then you can delete it.

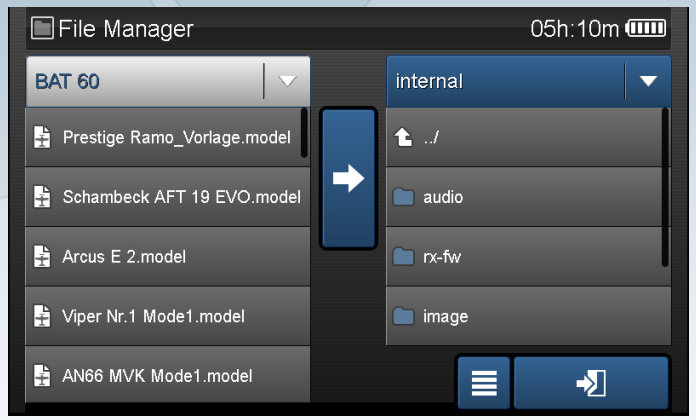




21.2.5. Import/export

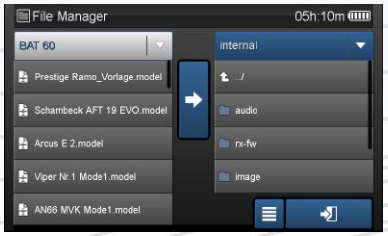
You can save your model memories for safety reasons or to transfer them to another BAT radio. Follow this steps for exporting models:

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 selction is possible. Wait until the information pop-up is gone.



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

1.



2.

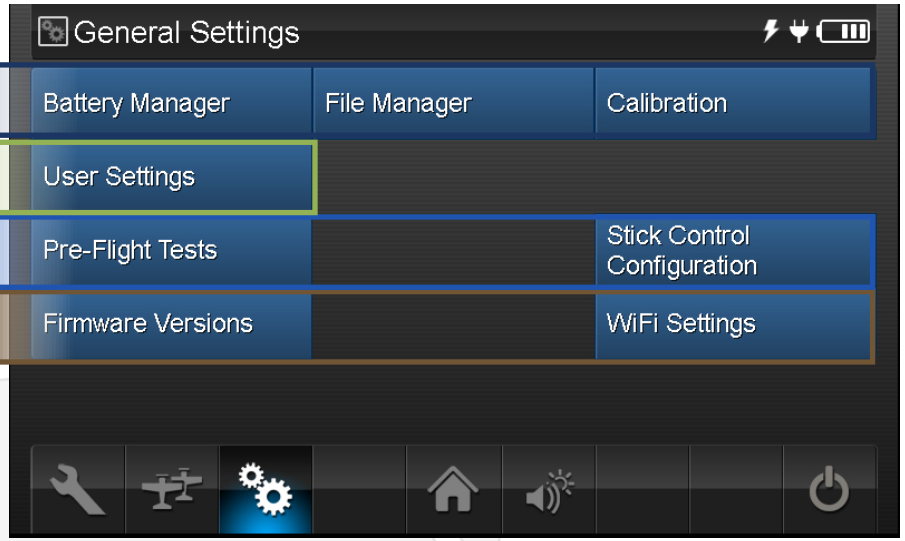
3.

4.

5.

21.3. General Settings

Tab on the gears left of the home screen button.
Please note that these settings are the same for all model memory.

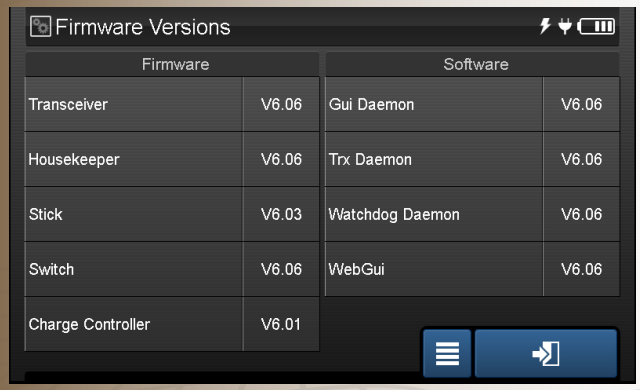


- **Battery Manager,** here you can see the status of each of the 4 internal cells.
- **File Manager,** whenever you have to copy or move some files. But if you want to copy modelmemory please go to the model management menue.
- **Calibration,** here you can calibrate all potis and sticks at your radio.

- **User settings:** Amongst other things you can enter your name and set the time.

- **Pre-Flight Tests:** This is your safety check before operation of your model.
- **Stick Control Configuration:** Here you have to adjust the correct typ of stick control

- **Firmware Version:** Always doublecheck the versions after you performed an update.



- **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 deactived the WiFi if you want to get the maximum backchannel / telemetry operating range.

21.3.1. Battery Manager

Battery Manager

Check the roughly estimated remaining capacity of each cell, the actual voltage and the health state. The 3 blue shaded cells are in use, the 4th grey shaded is the reserve cell.

The last column shows the status of each cell.
There are 3 different symbols:

Indicates cell status good.

Indicates cell is OK but should be charged or is not yet fully charged.
Attention: spare cell indicates this already below 3,9V to maintain fully charged spare for safety

The cell cannot be charged or there is a malfunction of the cell.
Please switch the radio off and charge it fully. Now switch on again and if the symbol is still there please contact our service.

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.

INFO: the Charge Controller Firmware (see chapter 16) can not be updated by the customer. There are meanwhile 2 different versions. The first version is V1.09 the second is V6.01 (6 cell upgrade, improved charging and generel improvements)

Please use the Remaining Capacity only for a rough estimation.
The Voltage is perfectly displayed. A cell is fully charged with 4.2 Volt and the cell is emtpy with pproximately 3.3 Volt.

21.3.2. File Manager

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.
Select the source with the dropdown menu.

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 now possible.

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

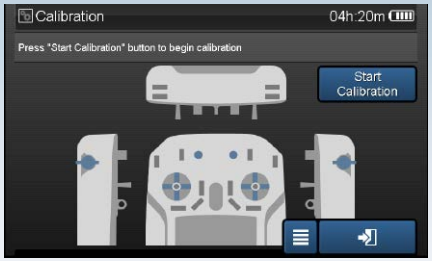
21.3.3. Calibration

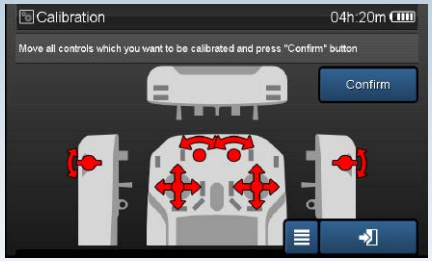
Calibration

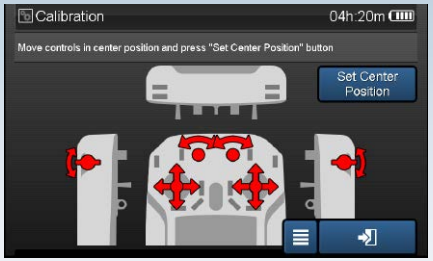
Here you can calibrate:

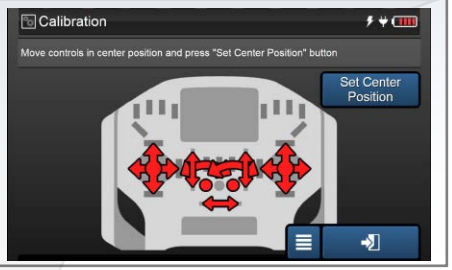
- BAT 60:
  - o 2 top potentiometer
  - o left and right side potentiometers
  - o two axis at each of the two sticks
- BAT 64 :
  - o 2 potentiometer,
  - o 3 sliders
  - o two axis at each of the two sticks

Just press the button “start calibration” and follow the instruction in the text field above. Also see chapter 15.





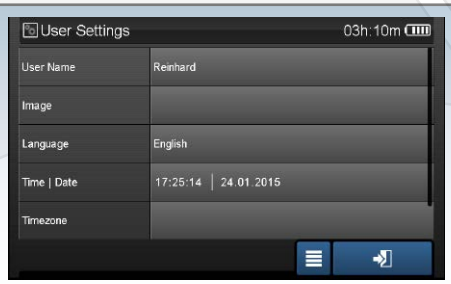


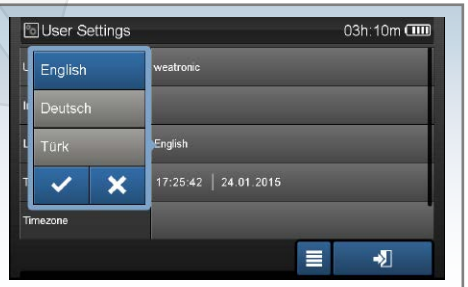


21.3.4. User Settings

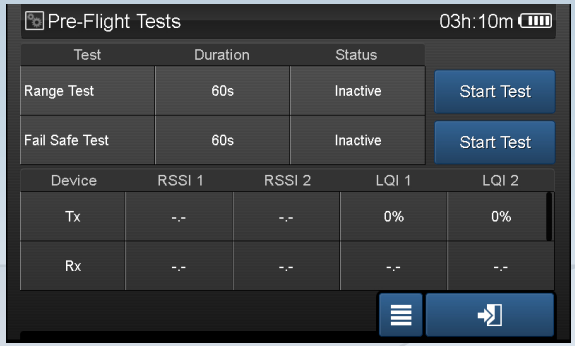
User Settings

- **User name:** type your name
- **Image:** this option will be soon available
- **Language:** Select a language. Now please reboot the transmitter!
- **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:** this option will be soon available
- **Model Categories:** this option will be soon available





21.3.5. Pre-Flight Tests



Pre-Flight Tests

You see two different tests - "Range Test" and "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 (see chapter 21.1.5.2.4).
- 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 chapter 21.1.5.2.4 for detailed information and how to adjust it. The menu “Fail Safe Test” allows you to test the failsafe coniguration for the entire model.

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.

DANGER

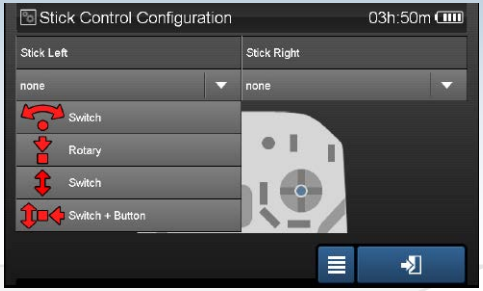
There can be serious injuries even death. Cutting Fingers and arms is really easy with strong electric motors. So make sure that especially functions for electric engines with propellers or rotor blades or similar are set to a **“OFF”** value!

21.3.6. Stick Control Configuration

Stick Control Configuration

If you installed a additional control to one of the sticks (see chapter 8.3.2), you have to configurate this additional control. Choose the option accordingly from the dropdown menue. 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.

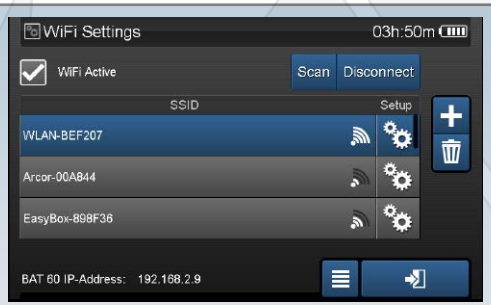
Please make a restart of the BAT transmitter after you changed the stick control.



21.3.7. WiFi settings

WiFi Settings

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

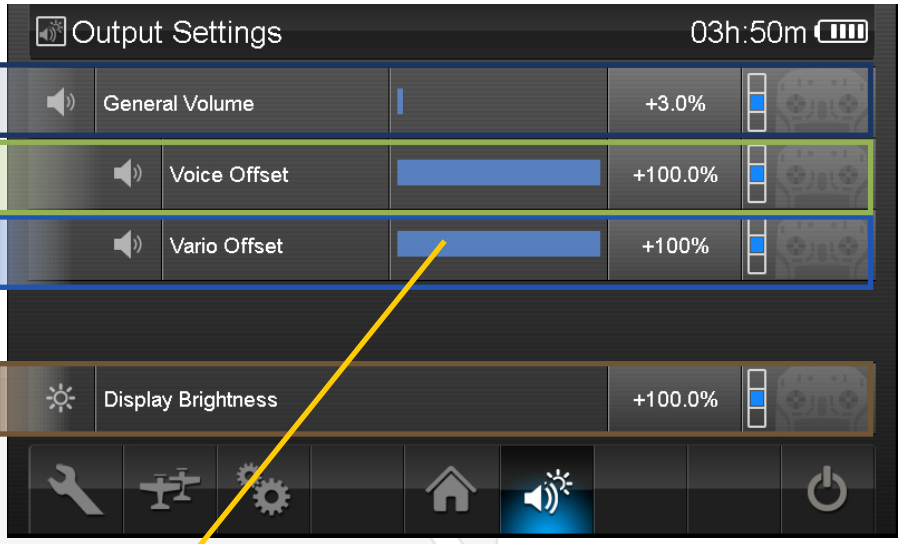


1. First of all make sure that the correct **WiFi dongle** is plugged to the internal USB port (the left one if you look from the bottom).
2. Please note that the WiFi is deactivated by default at each switch on.
3. Navigate to the WiFi menue and tab the empty box on the left top area and **check the WiFi Active option**.
4. Now tab the **"Scan" button** and wait a little
5. Search and scroll if nessasary 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 menue.
8. Now add the correct password (doublecheck 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 adress** 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 webbrowser** and **type the IP adress** of the BAT radio **to the adress bar**
    - now open (normally hit "enter") the adress and you will see the Homescreen of your BAT radio

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 also refer to the hints when using this external programming option:
- The keyboard doesn`t work proper with external devices. Please use the keyboard pop-up of the transmitter itself.
- Avoid the same menue and simultaneous use of the same menue with several clients.
- We recommend to switch the Wifi off when you are going to operate your model. The backchannel performance is a little shortened.

21.4. Output Settings

Tab on the symbol right of the home screen button.
Please note that these settings are the same for all model memory.



The General Volume:
assign a control to adjust the volume.
For linear distribution we recommend:

- low 3% (this is the default setup)
- mid 30%
- high 100%

Voice Offset:
If needed, assign a control to change the voice output volume offset.

Vario Offset:
If needed, assign a control to change the vario-tone volume offset.

Display Brightness:
If needed, assign a control to change the brightness of the display.
We recommend 3% as the lowest value.

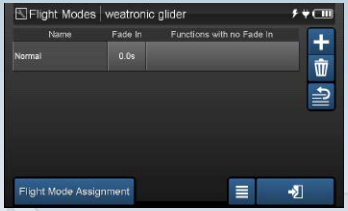
Please check the blue bars as an indicator for the volume of each option.

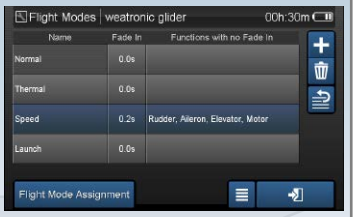
22. FAQ regarding programming a model

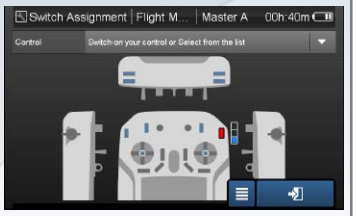
How to add new flight mode?

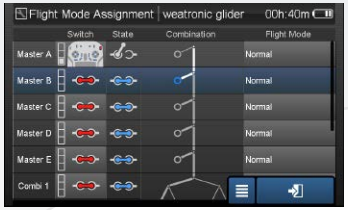
Please note: We recommend to adjust your plane first of all proper with all function and function mixers. Each new flight mode will first of all copy the normal flight mode.

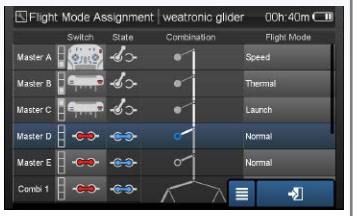
1. Go to the Flight Mode menu. There you see the standard flight mode which is called “Normal. Now press plus and rename the New Flight Mode.
2. Now go to the “Flight Mode Assignment” menu. There you see a ”Priority Overview Graphic”. Each line can be activated by a switch. And then each line can be linked to a flight mode.
3. The active line is shaded blue. Priority is from top to bottom.
3. 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 dropdown menu on the top to select the control item which you need to activate this line.
4. 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 possibilitiies: middle and one of the two sides.
5. 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
6. 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.
7. 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.
   - “empty” circles indicates the “normal” flight mode
   - “filled” circles indicates that there is a flight mode assigned.
   So you can easily see if there are some “not assigend” combinations





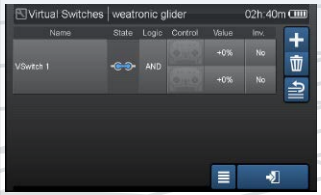


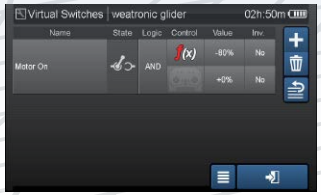


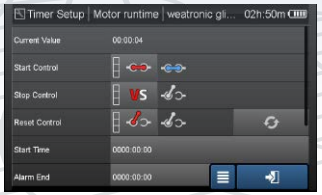


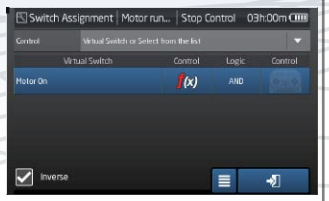
How do I get a motor runtime timer?

1. First of all you have to create a virtual switch which simulates a switch which is closed if the motor is runnning. 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 contorl icon. You will come to the control assignment page. Use the dropdown 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 logik. The value is the actual function output value which is normaly from -100% to +100%. Check the function setup (chapter 21.1.5.2)
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 dropdown and select your former created virtual switch. Please check the “Inverse” box if nessesary.









23. 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)

24. 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

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.

25. 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.

26. You need help?

Ask our support at support@weatronic.com or call us under : or +49 (0) 33 75/24 66 0 88

Istanbul, 29/06/2015

weatronic GmbH
Schmiedestraße 2A
15745 Wildau

Telefone: +49 (0) 3375 24 60 89 - 0
Telefax: +49 (0) 3375 24 60 89 - 1
E-Mail: info@weatronic.com
www.weatronic.com