

VBAR NEO

QUICK START GUIDE
VBASIC RECEIVER
FOR VBAR CONTROL



Mikado
Model Helicopters

Welcome to VBar NEO VBasic!

VBar NEO VBasic (VBasic) is an innovative receiver for VBar Control, setting new standards with regard to range of features, and fit for the future with updates and function extensions.

Features:

- Easy setup via VBar Control Setup Wizard and clearly structured menus in VBar Control
- Using Presets and the Setup Wizard you get ready for flight quickly—for almost any application, like R/C-cars, boats, planes, jets, as a receiver for a multi-rotor flightcontrol, as a receiver for other flybarless systems
- Competition-ready since it does not use gyros
- 5 analog control functions and programmable switching functions
- 9 physical outputs (servo connectors)



- 3 parameter banks (flight modes/-conditions)
- 6 mixers with 5 inputs, differential mix, servo-throw adjustment, servo-travel limit
- expo, trims and multi-rate per parameter bank and control input
- throttle channel with idle trim (via rotary knob) and throttle idle for each parameter bank
- innovative, self-learning trim concept without help of gyros (trim while you control the model), optional trim by means of rotary knobs, EDS dial on VBar Control
- Buddy-boxing ready, also cross-over-buddy-boxing ready (VBar Control together with a radio of a different brand)
- Model Sharing (bind and fly)
- Ready for VBar Control telemetry sensors or Kontronik® TelMe
- Event Log
- Macrocells offer freely programmable mixers, 7-point curves, sequencers e.g. for retracts
- Multiprotocol Single Line Receiver: connect to other systems via proprietary or open protocols like Futaba® S.Bus, Spektrum® satellite protocol simulation, Universal Digital Interface (UDI), analog PPM8 or PPM12 (8/12 channels), with variable update rate, both as input and output possible

- Connect multiple VBasic and/or VBar NEO devices via Interbus to get a multi-redundant diversity receiver setup (up to 4 diversity receivers/8 antennae), with up to 23 physical outputs (servo connectors)
- Ready for updates as they come available—with software updates you can enable VBasic for other purposes, for more complex airplanes (VPlane), for helicopters (VBar), for multi-rotors (VCopter), and VBar and VCopter of course with the tried and tested Rescue feature—all required sensors are already on board
- For a full overview about the update-options as well as extensive and current online documentation, please visit www.vstabi.info/vbasic

These features make VBasic probably the most flexible receiver product on the planet, with unrivalled connectivity to products of other manufacturers.

Contents

VBar NEO VBasic Receiver, USB wire, Boot Plug.



Safety Instructions

Any R/C controlled model, especially it's rotating parts, can pose serious dangers to persons and things. You must obey all safety instructions of the manufacturer for operation of your R/C controlled model.

VBar NEO VBasic and VBar NEO are not an autopilot!

VBar NEO VBasic and VBar NEO may be installed in radio controlled models which are suitable for it. During installation and operation you must follow all instructions given in the software of the radio and in manuals. The device may not be operated in wet conditions (high humidity or rain).

In case the model shows vibration during use, operation of the model is to be stopped immediately. Do not continue operation until the cause for vibration has been eliminated. This applies especially if a firmware with gyro sensor support is used.

- **Since the ESC/throttle servo is directly connected to the device, disconnect the motor wires or remove the pinion gear to avoid accidental spooling up of the model while setting up the speed controller (ESC) or throttle functions. The same applies when loading unknown setup or preset-files, as they may transport other receiver and speed controller settings as you have on your model!**
- **When using an external gyro sensor, the sensor must not be connected to a different connector than Sensor, else it will be destroyed beyond repair immediately.**
- **Make sure you use a sufficient power supply.**
- **Fail safe will be set automatically by the VBar/ VBar Control (throttle/motor off, servos on hold position).**

1. Items needed for first installation

- VBasic Receiver and a VBar Control radio
- Power supply (BEC or receiver battery)
- Model with servos installed **but not yet connected!** Pulse rate can be changed, but make sure you do not exceed the servo's specs, else they may get damaged
- For updates and extensions of VBar NEO VBasic you need the VBar Control Manager software which you can download conveniently from www.vstabi.info as well as a Mini USB wire and a Boot Plug

2. Update and Registration

Before beginning a setup, update your VBar Control and VBar NEO VBasic. Open the VBar Control Manager, plug the Boot Plug into the Sensor port, connect to your computer and power up your VBar. The LED will flash white. The update will be performed automatically if necessary. During the update, the LED will light up yellow briefly, then start flashing green.

Disconnect the Boot Plug and the USB wire and power cycle your VBar.

Click on Applications in the VBar Control Manager to access the App Store, where you can register your new VBar NEO VBasic to your MikadoID with one click of your mouse, and purchase function extensions.

It is always a good idea to register your product: this way we can keep you updated on new features.

Make sure you perform an update of your VBar Control, too, to enable it for use with VBasic..

3. Bind procedure

VBar NEO VBasic will go into bind mode after approx. 10 seconds. The LED will flash green-red to indicate it's ready for binding.

Refer to your VBar Control Manual to bind your VBar NEO VBasic to your VBar Control Transmitter.

4. Mounting VBasic

VBar NEO VBasic can be mounted anywhere on the model. Mind to keep the antenna wires away from conductive materials such as metal or carbon fiber, as this will possibly reduce the range considerably. You do not need to securely mount the VBar NEO VBasic. It can be put into a fuselage, protected by styrofoam for example. You do not need to align the axis of the device to the axis of the model unless you intend to use a firmware with gyro stabilization.

5. Setting up a Model

Select the type of model from the VBar Control Model Setup which comes closest to your model, and follow the instructions on the screen of the radio. The Setup Wizard will show where to connect which servo. Now connect the servos.

Throttle can be connected in two ways: either connector for Throttle (stick control) or connector ESC (advanced control with motor switch, idle settings per parameter bank).

Make global settings (e.g. center positions, directions, throws) for the output channels in the menu Output Channels.

Make settings for parameter banks/flight modes/conditions (e.g. expo/offset (from center)/rates (like Dual Rate) for the control functions, for each parameter bank.

To set up mixers, or to select other transmission protocols for in-/outputs use the Macrocells menu.

In the Trim menu, assign a switch to activate Trim mode. Make sure you set up a sensible switch configuration, avoid accidentally assigning two or more functions to the same switch.

6. Trim

Adjust all control functions of your model to neutral/center (rudder/control surfaces/steering etc.). Carefully operate your model to see if it steers neutral. Use the sticks to control the model. Now bring your model to a neutral flight path/drive it

down a straight line and activate the trim switch. Keep controlling your model with the sticks. The small stick inputs you make will now be stored as trim values automatically. As soon as you do no longer have to do stick inputs to keep the model steady, trim is done. Now deactivate the trim switch.

How it works: within a small deadband around center, trim mode is inactive. With larger stick inputs, you also do not trim the model. You have full control over the model, at any given time. Between the deadband and about 30 % of stick deflection, control inputs will also slowly be stored as trim values. The trim range is approx. $\pm 30\%$ of the overall servo travel.

In case the trim range is not sufficient, please check and adjust center of gravity/angle of incidence/servo throws/mechanical setup of the model.

7. Pre-flight check

Before operating your model, double check control directions (if a firmware with gyro sensor support is installed: also sensor directions) for all control functions, by moving the sticks (and with gyros: the model).

Be careful with rotating parts (propellers, driven wheels, ship's propellers etc.) so they can not cause harm or damage even if they start up unintentionally/accidentally.

8. Wiring your VBasic Receiver

Connectors

(may vary depending on model type/wizard, see VBar Control)

ESC	Electronic Speed Controller, Throttle Servo (Function)
TAIL	Steering/Rudder/Tail Servo
CH1-3	Control Servos according to table in VBar Control
CH 4	free, or ESC/Throttle (direct control from throttle stick)
AUX1-2	Channels controlled by rotary knobs, or Single Line Bus Signal (select type in the wizard)
RPM	RPM sensor input
Sensor	External gyro sensor (optional), NEVER use for power supply!
USB	USB wire
TELE 1, TELE 2	Telemetry bus for VBar Control.

Power supply may be connected to any port except *Sensor*. There is no voltage divider needed for rpm sensors. For further applications (additional functions) see App in VBar Control and online manual on www.vstabi.info.

9. Miscellaneous

Exemption from Liability

Mikado does not assume liability for completeness or correctness of the content of this manual and of the software.

The user assumes all liability for all potential damages or claims that might arise from the operation of this device and his R/C model.

Technical Data

Supply Voltage	3.5-8.4 V (2S LiPo)
Current Consumption	ca. 120-170 mA
Operating Temp.	-5 to 60 °C / 23 to 140 °F
Dimensions/weight	45 x 25 x 15 mm / 17 g .177 x .098 x .059 in / .6 oz

Accessories

You will find accessories to be used with VBar NEO VBasic Receiver on Mikado's website www.mikado-heli.de

Support

Forum and extensive online manual at www.vstabi.info

Email: service@mikado-heli.de
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