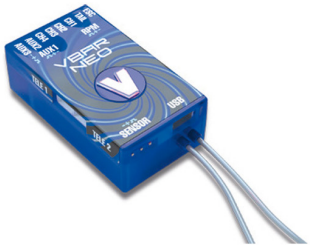
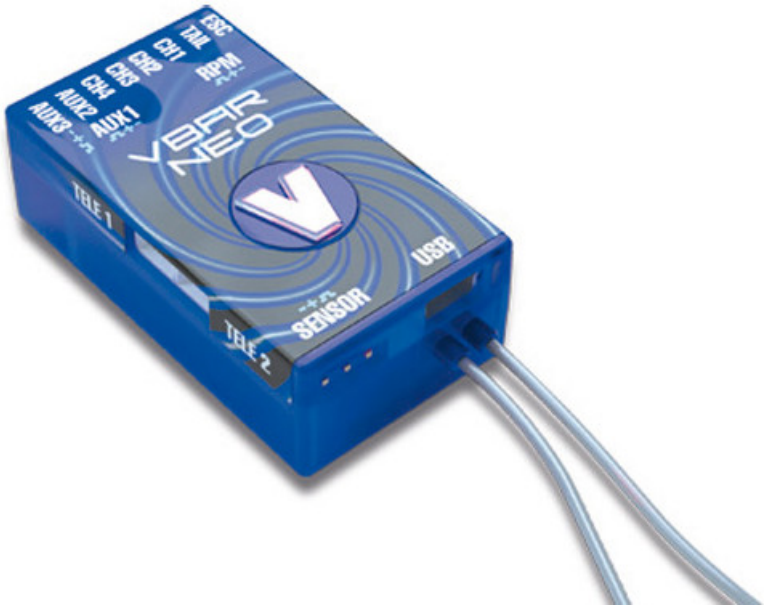


Mikado VBAR EVO Express-Firmware Built-in VLink Receiver User Guide

Mikado
Model Helicopters

VBAR EVO
Quick Start Guide
Express-Firmware



Contents

VBAR EVO Express-Firmware Built-in VLink Receiver

Welcome to VBar EVO!
VBar EVO is an innovative product setting new standards for model helicopters in terms of flight performance and programming capacity.
Features:

- Easy setup and fine adjustments can be done with any VBar Control radio.
- Ready for online updates as they become available.
- Built-in Governor for electric model helicopters (IC powered models require the Pro firmware).
- Fully compatible with VBar Control. For setup using VBar control, please refer to your VBar Control manual or to online help in VBar Control EVO/Touch.

FCC Statement
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.
The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm / 7.87 in from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users must be provided with transmitter operating conditions for satisfying RF exposure compliance.
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
FCC ID 2ABXHVBCRX30

Safety Instructions

An R/C controlled helicopter is not a toy! While moving, the rotor blades pose a serious danger to persons and things. You must obey all safety instructions of the manufacturer for operation of your helicopter.
VBar is not an autopilot! VBar may be installed in model helicopters suitable for flying without flybar. During installation and operation you must follow all instructions given in the software of the radio and in manuals. VBar may not be operated in wet conditions (high humidity or rain). If the helicopter shows vibrations during flight,

operation is to be stopped immediately. Do not continue flying until the cause for vibration has been eliminated.

- Disconnect motor wires or remove the pinion gear to avoid accidental spooling up of the helicopter while setting up the speed controller (ESC), or when loading unknown setup, as they may contain different speed controller settings as you have on your heli!
- Make sure you use a sufficient power supply.
- Fail safe will be set automatically by VBar/VBar Control (motor off, servos on hold position).

VBar EVO and high servo frequencies
Your VBar NEO can—with update to Pro or Pro+Rescue—drive suitable servos with higher frequencies than before. Similar to overall gyro gain (too high = oscillation, wobbles, shaking), a wrong setting can degrade the flight performance, or even endanger/destroy the model.
Please make sure you read the following tutorial before changing the default settings! **https://www.vstabi.info/node/2455**

https://www.vstabi.info/node/2455

Items needed for first installation

On first installation, you will need:

- VBar EVO with built in VBar Control VLink Receiver and a VBar Control radio
- Power supply (BEC or receiver battery).
- Helicopter with servos installed, but not yet connected! Only digital servos allowed!
- Pitch Gauge (swash plate levelling tool)
- For updates and extensions of VBar EVO you need the VBar Control Manager software which you can download conveniently from **www.vstabi.info**.

Contents
VBar EVO with built-in VBar Control Receiver, USB C wire, Gyro Pad.

Update and Registration

Before beginning a setup, register and update your VBar Control and VBar EVO. Open the VBar Control Manager, connect to your computer using the USB C wire, only then 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 USB wire and power cycle your VBar, and it will start up for normal operation, flashing blue during initialization, then red-green. If you want to use the VBar Control Manager again (e.g. to access the App Store), just power cycle your VBar. It will start up in update mode again as long as it is connected to your computer.
Click on Applications in the VBar Control Manager to access the App Store, where you can register your new VBar to your MikadoID with one click of your mouse.
Perform an update of your VBar Control, too.

Preparing the Helicopter

First you need to assemble the helicopter in accordance with manufacturer's instructions. Flybarred rotor systems are not supported. It is very important that you assemble the helicopter mechanically correct with exact symmetry and geometry. This is to ensure that you do not run into problems resulting from mechanical inconsistencies later.

Bind procedure, programming

VBar 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 to your VBar Control Transmitter.

Wiring your VBar

Connectors

ESC	Electronic Speed Controller
TAIL	Tail servo
CH1-4	Swash plate servos according to diagram in the software
AUX1-3	Additional functions
RPM	RPM sensor input
USB	USB wire
TELE 1, TELE 2	Telemetry bus for VBar Control.

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

Pre-flight check

Before each flight you must double-check the active direction of the swash plate and the tail rotor. To do so, lift the helicopter up and move it along the three axis.

Initialization (Pitch Twitch, V is lit)

During Initialization, VBar goes through a self-test. The LED will flash blue, then. The helicopter must be at rest during this test. When the test is finished, you will see a brief twitching (jump) of the swash plate, VBar Control will show ‚Connect'. Also the V will light up solid green.

Operation

Upon successful initialization of the VBar and pre-flight check you may proceed to the maiden flight with your VBar. At the field you may further adjust any setting using your VBar Control.

Trim flight:

During a trim flight, VBar performs all necessary trims of the helicopter automatically (elevator, aileron, tail). A trim flight is not necessary if the servo linkages are installed mechanically correct, the swash plate is leveled, and the center of gravity is set properly.

To perform a trim flight, turn on the helicopter while the stick for collective is at full positive. The VBar confirms this with a short double-twitch (jump) of the swash plate. With VBar Control, enable trim flight in Flight Parameters. It is best to perform the trim flight in very calm weather conditions. For further information on how to perform a trim flight, click on “Trim flight info” in the flight menu, check out vstabi.info, or consult online help (?) on VBar Control Touch.

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 the VBar and his helicopter.

Technical Data

Supply Voltage	3.5-8.4 V (2S LiPo)
Current Consumption	ca. 80 mA
Operating Temp.	-5 to 60 °C / 23 to 140 °F
Dimensions/weight	45 x 25 x 15 mm / 14 g. 177 x .098 x .059 in / .5 oz

Accessories
You will find accessories to be used with VBar on Mikado's website **www.mikado-heli.de**
Support
Forum and extensive online manual at **www.vstabi.info**
Email: **service@mikado-heli.de**
vstabi@mikado-heli.de

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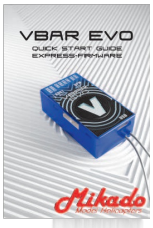
Documents / Resources

	Mikado VBAR EVO Express-Firmware Built-in VLink Receiver [pdf] User Guide VBCRX30, 2ABXHVBCRX30, VBAR EVO Express-Firmware Built-in VLink Receiver, Express-Firmware Built-in VLink Receiver, Built-in VLink Receiver, VLink Receiver, Receiver

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- Framerate Tutorial / Servoraten Anleitung | VStabi