# JETI REX Assist Update Version 1.10 (September 2018)

> **Warning: After updating to the version 1.10 it is necessary to verify that all rates and gains in all flight modes are all right. Stabilization algorithm has been modified since the previous version. By verifying that the model behaves correctly, you can prevent unexpected consequences.**

New features:

1. User can choose which receiver parameters will be available through **EX telemetry** data stream to the transmitter. Additional *Status* parameter has been added – it reports a number according to the current flight mode (0 = Assist disabled, 1-3 = number of the flight mode, 4 = fail safe).
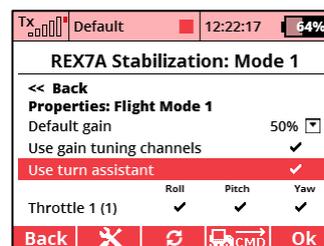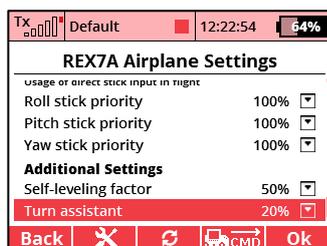   You can also choose between absolute G-force (only positive value calculated from all 3 axes) and G-force acting only in Z-axis (to determine loads correctly, the number is positive for positive-load maneuvers and negative for negative loads).
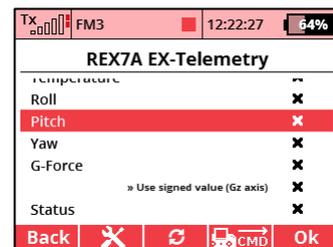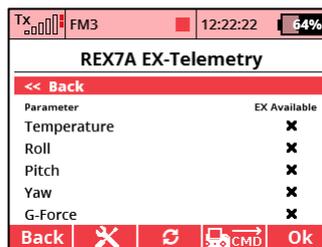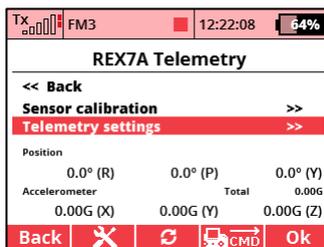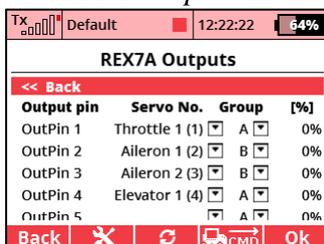

2. Airplane: **Training** flight mode has been reworked: Flight stabilization (similar to Normal mode) is applied also in Training flight mode but does not allow the airplane to exceed maximum specified roll and pitch values. Slow return to horizon is also applied in this flight mode.

3. Airplane: **Horizon** flight mode has been reworked: It now acts similarly to the Normal mode with additional slow return to horizontal position. The speed and force of the Return-to-Horizon parameter can be set in the *Configuration – Airplane Settings* menu.
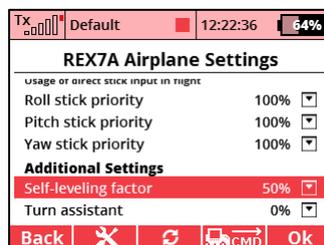
4. Added **Turn assistant** function. This feature will help beginners to perform turns in arbitrary flight modes simply with just aileron stick input. In the *Configuration - Airplane Settings* menu set the percentage gain for the turn assistant (20% as an example), then locate the *Stabilization settings/Flight modes* menu and enable this function for the flight modes of your preference by ticking "Use turn assistant". Responsiveness of this function depends on the speed of an airplane (the coefficient should be lower in higher speeds), so it will require some tuning to optimize the turns. Usually lesser value is better than higher for initial setting.

REX7A Airplane Settings	**REX7A Stabilization: Mode 1**
TX Default ■ 12:22:54 64%	TX Default ■ 12:22:17 64%

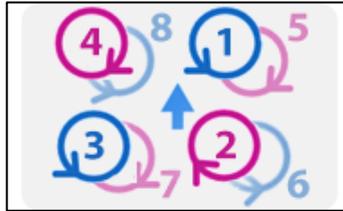|	
Usage of direct stick input in flight	<< Back
Roll stick priority 100% ▼	**Properties: Flight Mode 1**
Pitch stick priority 100% ▼	Default gain 50% ▼
Yaw stick priority 100% ▼	Use gain tuning channels ✔
Additional Settings	Use turn assistant ✔
Self-leveling factor 50% ▼	Roll Pitch Yaw
Turn assistant 20% ▼	Throttle 1 (1) ✔ ✔ ✔
Back ✕ ⟳ CMD Ok	Back ✕ ⟳ CMD Ok

5. Airplane: Added a new **2D stabilization mode**. In this flight mode the airplane attitude is limited by maximum roll and pitch angle. Stick position corresponds to roll and pitch angle and allows you to fly straight without altitude loss (altitude is kept when the throttle channel is assigned and above 10%). As an option, we recommend you to enable the turn assistant function to perform smooth turns.

6. Added logging of internal events.

7. In the Device Explorer menu it is possible to view actual percentage values for each receiver output – see the *Configuration – REX A Outputs* menu.

| TX Default ■ 12:22:22 64% |
|---|
| **REX7A Outputs** |
| << Back |
| **Output pin**   **Servo No.**   **Group**   **[%]** |
| OutPin 1   Throttle 1 (1) ▼   A ▼   0% |
| OutPin 2   Aileron 1 (2) ▼   B ▼   0% |
| OutPin 3   Aileron 2 (3) ▼   B ▼   0% |
| OutPin 4   Elevator 1 (4) ▼   A ▼   0% |
| OutPin 5   ▼   A ▼   0% |
| Back ✕ ⟳ CMD Ok |

8. Multirotor: Added possibility to run the automatic calibration of ESCs after startup (tested with BLHeli firmware). Procedure:

   - Always remove propellers at first!

   - Locate *Device Explorer – REX A – Configuration – Multicopter Settings*. Here scroll down to **"Calibrate ESCs after restart..."** and press the 3D button.

   - Confirm the question by pressing the F5(Yes) button. Now the receiver waits until it is rebooted and does not accept any stick commands.

   - After rebooting and initializing, the receiver sets all its motor outputs to *Maximum throttle* (by default 1.9ms). After additional 5 seconds the outputs will be set to *Throttle Off* position (default 1.0ms). In this way it's possible to set constant startup and spinning rates for each motor at once.

   - Optional: Modify the value of *Minimum running throttle* parameter because the calibration process alters revolutions at this point.

TX Default ■ 12:22:09 64%
Multicopter Settings
» Test motor 1...
» Test motor 2...
» Test motor 3...
» Test motor 4...
» Override all motors 1.000ms ▼
» Calibrate ESCs after restart...
Calibrate the ranges of ESCs - remove the propellers!
Use OneShot125 ✔
Back ✕ ⟳ CMD Ok

9. Multirotor: Added support for X8 frame type.

10. New possible receiver position: "Rotated 270°" in Yaw axis.
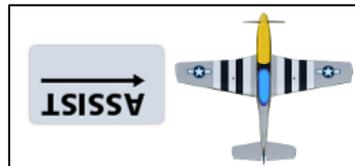
Modifications:

1. Fixed "Calibrate Accel." message that appeared repeatedly on some devices even after the accelerometer calibration had been done.

2. The initialization procedure is now more immune against minor vibrations when the steady-position is required after startup.

3. If the transmitter uses full 24 channels in *Stabilized EX Bus mode*, the receiver is able to stabilize up to 16 channels and the rest is directly copied to the EX Bus serial output. Thus, the connected device, such as Central Box, is able to see full 24 channels.

4. Stabilized EX Bus output (e.g. for use with Central Box) now behaves according to the Fail-Safe setting in the REX Assist *Configuration – Stabilization Settings/Flight Modes* menu:

   - If the *Intelligent* fail-safe mode is set, the EX Bus output is always stabilized, even if the receiver loses signal (considering both the RF link and signal from PPM inputs).

   - If the *Assist Off* option is set, the EX Bus output will be disabled after the receiver loses signal from both the RF link and optional PPM inputs. This allows the Central Box to switch over to the second serial data input.
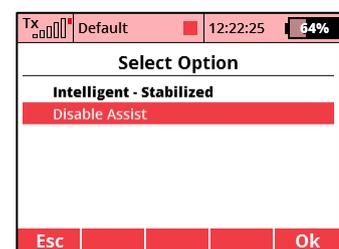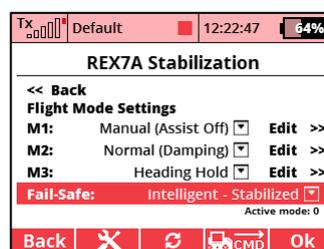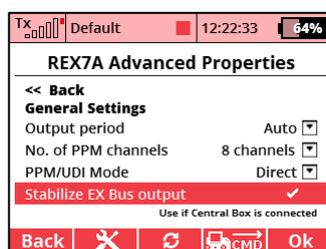
5. Importing settings from JETI Studio now works correctly.

6. Aerobatics factor (see *REX Assist Configuration – Airplane settings*) is set to 100% by default.

7. Added possibility to format the internal FLASH memory through JETIBOX. In JETIBOX locate *Settings – PresetToSetup (Factory default) – PresetToSetup (Format).* Formatting completely erases all data and settings, also binding will be lost.

8. Airplane: Aileron stabilization can be correctly turned off for each flight mode.

9. Multirotor: Standard servo outputs are now enabled.

10. If the PPM input is set but not present, the "Low signal alarm – S" will be correctly generated.

11. Airplane: Arming is not possible by stick combination known from multirotors.

12. EX Bus devices connected to the receiver are not marked as disconnected anymore, as happened sporadically in previous versions.

13. Multirotor: The directions of motors are now displayed correctly for **Hexacopter (y)** multirotor type.
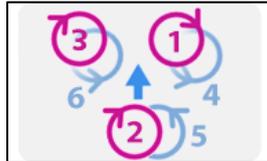
JETI REX Assist Update Version 1.09 (May 2018)

Modifications:

1. Removed function of *"Airspeed compensation"*, the use of which could be in conflict with DE102013201554B3, DE102013201553B3 a US000009283490B1.