


Turnigy 9x 2.4GHz radio TGY

By Bernard Chevalier , France  (September 2010).

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Translation    

A powerful 2.4 GHz radio, programmable with a receiver for 40 € is this possible? The radio control has for some time the seat of important innovations. If the years were needed to obtain a larger screen, greater programming power and a higher number of lanes, progress is accelerating. Specialized manufacturers have recently proposed: the touchscreen, 2.4G and integrated telemetry. He lacked, however, a crucial step: more affordable prices. This is done with the new **Turnigy TGY 9x** . For less than \$ 55 (40 €) you can get a programmable radio 2.4 GHz 8 channel 9 channel with its receptor. No you're not dreaming!



Turnigy 9x 2.4GHz radio TGY

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1 - A 2.4 GHz radio for less than 50 € ? With this level of prices, supply will cause Turnigy mass conversions to 2.4Ghz. The transmitter is sold \$ 54 (40 €) with an 8-channel receiver, the additional receiver is sold only 9 \$ (7 €). You will find this offer here: **TGY 9x Turnigy** .

When comparing prices with those of major brands are still hallucinating! A receiver 7 channel Futaba Fasts costs between 70 and 100 €. How is this possible? What is the Turnigy equipment (also sold under the brand Imax 9x, Jamara (Air Jump-Cu) and Eurgle). We will try to answer these questions by examining its key features. We limit ourselves to functions that apply to aircraft electrical. This article is not exhaustive as the TGY 9X has other skills (helicopter, glider, aircraft thermal).





the cabinet of TGY 9x, the transmitter and a detail (lack of gas).

In early 2010 a first version (V1) of TGY9x is marketed. It is quickly withdrawn from the market for technical problems (D / R setting EXP) and buyers reimbursed. This is a minor problem on the radio. This is more serious for the first Turnigy 2.4Ghz transmitter modules with defects reported on RC groups (CPU too slow in certain circumstances). A second revised version (V2) was born in May 2010, this one I present to you.

The cabinet contains a transmitter TGY 9x 9 channels / 8 channels with a transmission module to 2.4Ghz (RF9X-V2) and an 8-channel receiver (9X8C-V2). In the box, do not try, there is no transmitter battery (11.5V), if the charger.

You will find the [instruction manual Imax9x](#) a similar version in English on the web. Attention model Imax9x not exactly identical to the TGY9x and the manual has errors (I tried to correct in this presentation).

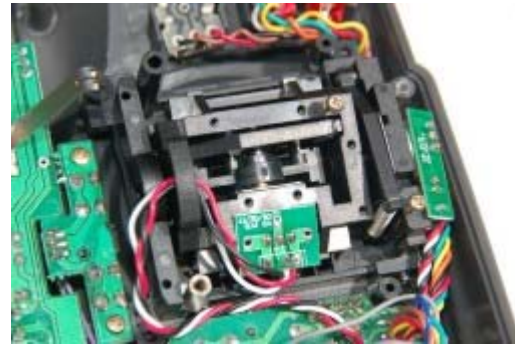


The transmission module (RF9X-V2), the folding antenna and 2.4 GHz receiver (9X8C-V2).



2 - Specifications of TGY 9x : The 9x TGY is a radio channel dedicated to 2.4Ghz 8, manufactured by Flysky as the FS-TH9X. This is not a low-end model, it is fully programmable and has functions already well advanced (for its price). The transmitter is compatible with the transmission modules ASSAN (so we can use receptors from the same brand).

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Technology: The new transmission module (TGY-9X) is of type FHSS (Frequency-hopping spread spectrum) and uses frequency hopping. This technique has a high transmission reliability because it is insensitive to interference.

His case, plastic is of type 'compact'. Its handling is excellent and his sleeves are adjustable hardness. Ergonomics copy clearly Futaba models, all controls are easily accessible. The antenna is directional.

167x34mm LCD screen (black and white) is fairly well mixed and makes a pretty good readability in daylight. However, the definition of characters and graphics are fairly average (previous generation).

Navigation is a conventional type. 6 keys allow access to many menus, selection and settings. The assembly is pretty straightforward except for the fact that the direction of movement of the cursor is not always related to the key position in space. For example pressing a button on the left you can navigate to the right ...



The main interuptor, detail on right side of the cross, the left sleeve.

- Encoding PCM 9 channel and 8 channel PPM PPM (2.4Ghz).
- 8 model memories internally with possibility to change their name.
- 167x34mm LCD 8 lines, 22 characters with adjustable contrast.
- Combines the programming for aircraft, glider, helicopter
- Doubles deflections (D / R) and a timer.
- Easy access to international grouped on the front.
- Battery Issue 11.1v 1700mAh lipo up.
- Ergonomic handle transportation.
- Navigation classic 6 keys.
- Software not upgradeable (flash).

- 7 Inter and 3 knobs.
- Alarm to start on some international.



The new transmitter module (TGY-9X) is of type FHSS (Frequency-hopping spread spectrum) and uses frequency hopping.

- Transmitter battery: The battery compartment accommodates a holder for 8 AA batteries. It can be retracted to accommodate a lipo battery 11.1v **2500mAh ZIPPY Flightmax** (Transmitter Pack for Futaba / JR) which gives great autonomy. If you use such a battery, attention to low battery alarm threshold because TGY9x is not set for the lipo. You will manage your own transmitter battery. If one adds to that a certain lack of precision in the output voltage of the battery issue you should recharge the battery when it reaches the 10s.

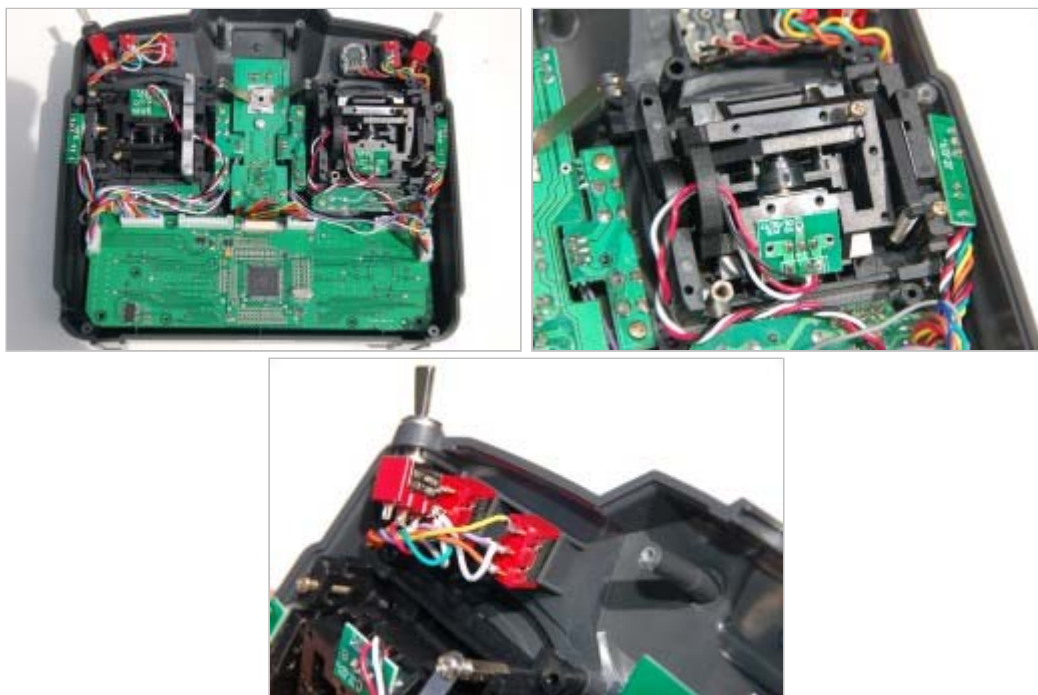




The battery compartment accommodates a holder for 8 AA batteries. It can be retracted to accommodate a battery 11.1v lipo Flightmax 2500.

- The basic settings you can adjust or change some settings to TGY 9x adapter for your personal preferences.

To adjust the hardness of the sleeves, open the box with six metal screws in the back. Then remove the mat son connecting the LCD to the processor bus. A screw on each trolley sleeve allows adjustment of hardness. Proceed until you feel very neutral. It should not be too much bounce when you drop the handles from an extreme position. As you can see on the pictures below, the internal architecture of the device is very 'clean' and the weld quality is very acceptable.



The internal architecture of the device is very 'clean' and the weld quality is very acceptable.

To adjust the contrast of the LCD screen, intervene without the menu "SYSTEM" -> submenu "CONTRAST ADJ. The more you lower the value the greater the contrast is great.



To adjust the contrast of the LCD screen, intervene without the menu "SYSTEM" -> submenu "CONTRAST ADJ."

You can also change the control mode of the radio. Why intervene without the menu "SYSTEM" -> submenu "STICK SET". In France we commonly use mode 1 (throttle right), England and the USA is the mode 2. Here 4 modes are available, they can change the assignment on 3 of 4 axes. The throttle can not vary (right on Upper and Lower). Mode 2 requires that you have the throttle on the left (it is necessary to reverse the truck right and left).

Mode 1: straight handle -> Gas (H / B) and fins on G / D, left sleeve -> Depth (H / B) and the Directorate on G / D.

Mode 2: straight handle -> Depth (H / B) and fins on G / D, left sleeve -> Gas (H / B) and the Directorate on G / D.

Mode 3: straight handle -> Gas (H / B) and the Directorate on G / D, left sleeve -> Depth (H / B) and fins on G / D.



In France we use a common mode but here 4 modes are available.

- Identification of inter- and their positions The TGY9x has three international front (including one in three positions). Four others are available on the top of the radio (including one reserved for the public schooling). There are also three knobs. 3 are reserved for inter DR (Dual Rate) for the ailerons, the direction and depth. Another, all or nothing (GEAR) is for the landing gear.

The configuration of inter se made from different submenus in the menu "SETTINGS." When set to 'ON' the program runs, whatever the position of the inter (ON replaces all positions). 'OFF' the program will never be executed. Intermediate position depending on your programming. On 'NOR' program is run when the switch is in its resting position.

For example, for the flaps (flaps), use the button 'F.mod to 3 positions (NOR, ID1 and ID2). It triggers the inter TRN stopwatch (timer). It serves as the basis schooling.



3 - The receiver, the pairing (binding), range test :

- The receiver (RF9X-V2) did not require physical association with the module to be initialized (see the pairing below). It weighs 18g with 8 channels plus a battery socket. His antenna is a dipole single wire, its end covered with red shrink tubing is larger diameter. The ideal position of such an antenna on the model is vertical. If not possible you can align the fuselage provided away elements made of metal or carbon, battery and controller.

- Pairing (binding) association The receiver in this case the radio has already been associated with the transmission module 2.4GZ, so it is operational. To attach a new receiver, you must go into the menu "System Settings" then "MODEVAT" and tune the radio to PPM mode and then turn it off. Warning there are errors in the instruction manual PDF (inversion).

Insert the special cable (loop) in the file "BATTERY" the receiver and not in the sheet 'BIND' as indicated). Connect the receiver battery to the receiver in position 'BIND and wait until the LED flashes red.





Insert the special cable (loop) in the file "BATTERY" and connect the receiver battery in position "BIND", wait until the LED flashes red.

Press the button 'Test Range bind' the transmission module (back of radio) and, without releasing it, turn on the transmitter, the LED will stop flashing and remain lit constantly. Release the button and turn off the radio module. Then remove the special cord and disconnect the receiver battery, the receiver is ready. The effect is immediate and does not allow more than 3sec button 'test range bind' button.



Press the button 'Test Range bind' the transmission module (on the back of the radio), without releasing, turn on the transmitter.

• Distribution channels on the receiver can not change the distribution channels on the receiver (this is only possible on top of radio range). Unlike radio Futaba, the path of gas (throttle) does not need to be placed in position 'REV' (reverse).

- Channel 1: Aileron 1 (fins).
- Track 2: Depth (elevator).
- Channel 3: Throttle (throttle).
- Track 4: Management (Rudd).
- Channel 5: Train returning (Gear).
- Channel 6: Shutters (Flaps).
- Channel 7: Auxiliary 1 and fins 2 (for differential).
- Channel 8: Auxiliary 2.
- Channel 9: Battery.

Other compatible receivers: turnigy V2, the V2 and their equivalents flysky sold under the brands Jamara, Eurgle, Turborix 6 / 7 channels and Assan.

- Range test after hearing about problems with too small transmitter worn TGY 9x, some of which (somewhat optimistic) claim on the web it is limited to less than 100m, I made a life test . For that it takes two and each have a cell phone. The field experience is a pre devoid of obstacles, but through a power line and planted numerous trees. I gradually step preceded 50m each time with research reception problems and control the operation of all control surfaces. I could do a test at 300m, flush the soil, passing under the power line without any reception problems. This means that the air in a range exceeding 1000 meters. For me the effectiveness of this radio is enabled.



In our range test at 300m we had no problem.



4 - The main screen, the navigation buttons and menus : The 9x TGY is a radio rather easy to use. It stores quickly the organization of its soft and navigation is fairly intuitive. It is only regrettable that certain keys are used without regard to their spatial position on the case. And press a button to the right may well move the cursor left and press '+' can reduce the value that you set.

- Starting and main screen: To turn the transmitter simply push the switch. After a beep a main screen appears. The display is very classic one can read (among others):
 - The name of the model.
 - The type of model (airplane, glider, helicopter).
 - The state of the 4 qtr.
 - The method of radio (1-4).
 - The encoding (PPM, PCM).
 - The battery voltage.
 - Timer (stopwatch).





To turn on the transmitter, and push the main interuptor. After a beep the main screen appears.

- navigation keys: The transmitter has 6 navigation keys arranged on its front. There is not always a physical relationship between the spatial position of a button and its effect is bad because it makes TGY 9x a bit less intuitive. On the right the "Menu" and "Exit" can enter and exit the menu structure.
 - The "Menu" button pressed to enter the programming mode and settings.
 - Press the "Menu" button **briefly** to confirm a change and save.
 - Press "Exit" skips backward in the tree and exit programming mode and settings.
 - Press "UP" lets get on a list of option, but it also moves the cursor sideways in some cases (choice of menu and SYSTEM SETTING example).
 - Press "DN" is not used at all to confirm a selection or save, it can get a list of options. It also moves the cursor sideways in some cases (choice of menu and SYSTEM SETTING example).
 - The "+" button moves the cursor in a list of characters (dial a name) and increase (or decrease) the values of the settings.
 - The "-" button moves the cursor in a list of characters (dial a name) and lower (or increase) the values of the settings.



Navigation keys and LCD screen central TGY9x.

- The main menus of the TGY 9x: Upon powering up the transmitter features a main screen from which few have access to 2 main menus "SYSTEM" and "Settings." For this we must keep pressing the "MENU" button for more than 2 sec. To select a menu key must move the

cursor (in reverse video) using the navigation button "UP" then press "MENU".



Upon powering up the transmitter features a main screen from which few have access to 2 main menus "SYSTEM" and "Settings."



5 - The menu "SYSTEM" : It is the basic settings of the transmitter, the choice of models and the name of the memories. To access the 7 sub menu press the MENU key when the cursor is reverse video set to "SYSTEM".

- MODE SELE -> select model to fly.
- MODE NAME -> Give (or change) a name for your model
- SELE TYPE -> airplanes (ACRO), helicopters (HELI) and gliding (Glide)?
- Modulate -> to select the coding mode PPM or PCM.
- STICKSET -> Choose allocation round (mode 1, 2 ..).
- COPY -> Allows you to use the settings from one model to another.
- WO CONTRAST -> Adjust the contrast of the screen (inside / outside).





The menu "SYSTEM" and her 6 submenus.

- The sub menu "MODE SELECT" means "model selection and retrieves from memory the flight parameters related to one of 8 models stored. By pressing the "Menu" list is stored models. To select a template, scroll down to "UP" and "DN" then confirm with a short press the "Menu".



menu "MODE SELECT": 5 of 8 memories are already busy as can be seen on the right picture

- The sub menu "MODE NAME" allows you to assign a name to each of the 8 model memories. To avoid mistakes when selecting a template, choose meaningful names. By pressing the "Menu" button a screen to compose a name appears. Navigation is not intuitive but it works. Must select the position of the letter in the name with "UP" and "DN" Then the letter to incorporate the name with "+" (move in the list) and "-" (down in the list). Press about 1sec on the "Menu" button to confirm (you must take the blow). When the model name is written a very brief supporting "MENU" allows the backup. Then exit with "EXIT".



Menu "MODE NAME" allows you to assign a name to each of the 8 model memories.

- The submenu "TYPE SELECT" to define the programming environment. The TGY 9x can support aircraft (ACRO), helicopters (HELI) and gliders (GLIDE). Before making your settings you must specify what type of camera you use because the organization depends screens. Select the type of device in the list with "+" and "-" Briefly press the "Menu" button to confirm. Then exit with "EXIT".



The submenu "TYPE SELECT" to define the programming environment.

- The other submenus. They are used to select the encoding mode PPM or PCM (MODULATE), choose the award handles mode 1, 2 .. (STIKSET), use the settings from one model to another (COPY) and adjust the screen brightness (CONTRAST ADJ).



Select the encoding mode PPM or PCM (MODULATE), the allocation of sets (STIKSET) and use the settings from one model to another (COPY).



6 - The menu "SETTING" : Selected from the main screen, this menu allows you to access the settings of your device's driver aids. It consists of 2 screens (1 / 2 and 2 / 2) each containing 12 sub-menus. In total it's 24 sub-menus that await you.



The "Settings" menu consists of 2 screens (1 / 2 and 2 / 2) each containing 12 sub-menus. In total it's 24 sub-menus.

1 / 2 left
REVERSE

1 / 2 right
D / R EXP

2 / 2 left
FLAPTRIM

2 / 2 right
SNOPROLL

TRAINER	TRIM	AILDIF	THRNEEDL
Subtrim	IDLEDOWN	Airbrake	PROGMIX
E. POINT	FAIL SAFE	ELEFVFLAP	AILVATOR
THR HOLD	TIMER	V-TAIL	THRDELAY
Flaperon	DYSPLAY	ELEVON	AUX-CH

To achieve the basic settings on your device with the TGY9x you must:

- Select a model type (airplane, glider ..), give it a name and choose the transmission mode (PPM).
 - Go to the submenu "REVERSE" if necessary to reverse the rudder does not work in the right direction.
 - Go to the submenu "subtrim" to align all of your government (if no adjustments to the pushrods).
 - Go to the submenu 'E. POINT' to give the greatest possible clearance to each servo.
 - Go to the submenu "D / R EXPO" to set the normal deflections, deflections and double the sensitivity of the rudder. Expo '-' (negative) makes the aircraft more responsive, the exhibition '+' softened the control response.
- Other functions can improve driving comfort and correct defects in the aircraft.

- The submenu "REVERSE" is very useful, it can change the direction of operation of each servo to fit the model. Select the channel with the 'UP' and 'DN' then reverse with '-' or '+'. To back up briefly press the MENU button.



The submenu "REVERSE" is very useful, it can change the direction of operation of each servo to fit the model ..

- The submenu "TRAINER" corresponds to the function buddy box. The procedure is: Turn on the radio first Master. Extract the module radio broadcast student who must be 'OFF'. Connect the 2 radio-controlled by a simple cord 3.5mm jack (stereo). Radio students will have to function while its transmitter module remains inactive. In the submenu "TRAINER" you can declare the channels to be accessible to students and deny others. It is the inter spotted 'NRT' (trainer) who can give orders to the student. Attention there have been cases of reversal of operation of this Inter.



A simple cable jack 3.5mm (stereo) for the function buddy box.

- The submenu "subtrim" The SUB TRIM can precisely adjust the position of the servo arm neutral. They are particularly useful for aligning rudder when tringle orders are not adjustable or servos that are not accessible. In flight we have a similar action, but coarser, with TRIM radio.



SUB TRIM function can precisely adjust the neutral position of the servo arm.

- The submenu 'E. POINT': The END POINT adjusts for each channel, the maximum deflection. This is very useful in limiting the travel of a servo and prevent it being damaged (as in trains returning servos for example). Select the channel with the key to limiting the UP and 'DN'. Tilt the handle corresponding to this path in the direction you want to adjust. Change the value of travel limit with the '+' and '-'.



END POINT function adjusts for each channel, the maximum deflection.

- The submenu "D / R EXPO: Two different functions are grouped in this sub menu. Only the 3 main tracks (Ailerons, rudder) can access these settings. The first function (D / R) corresponds to the dual rate and can create double deflections that are activated by inter preprogrammed. For example the front left side for the depth (ELE D / R). This feature allows you to intervene in the normal deflections and then modify them to obtain the double deflections when you switch the appropriate cross.

The second function corresponds to the EXPO. It allows, for each main track, change the curve of the servos. This raises or lowers the sensitivity and responsiveness of governments. This is useful for correcting the flight behavior of some models.



The submenu "D / R EXPO brings together two different functions.

- The submenu "FAILSAFE" The failsafe function to define what behavior the receiver should adopt towards the servos when there is a breakdown of the emission beam. When the model is flying, you can try to keep it there hoping that the loss of control will be brief and fleeting or to drop it quickly so as not to lose. When working on the ground on the settings of your device, I suggest you set the FAIL SAFE with the gas = 0 (as in the photo at right). If you turn off the radio first inadvertently, it will avoid you see your plane take off or injure yourself.



The failsafe function to define what behavior the receiver should adopt towards the servos.

- The submenu "TIMER" The TGY 9x has only one clock (or timer) that can start and stop at will with the inter TRN (upper right rear). This is useful for limited flight time depending on

battery capacity. To set the timer menu go to "SETTING" then the submenu "TIMER". Enable the timer, then set the duration in minutes and dry with the + or -. The 'UP' and 'DN' to navigate (top and bottom). One may regret the inability to use the throttle to trigger the timer (handy in electric flight). Attention, the same cross is used for the public schooling, the timer is excluded in that situation.



The TGY 9x has only one timer that can start and stop at will with the international (top right rear).

- The sub menu "DISPLAY": Public Power Display is a kind of 'photograph' of the adjustment status of all output channels. You can see so mimic what were the methods used and with what intensity settings. By pressing the '+' or '-' you can get a test servos.



The sub menu "DISPLAY" achieves a kind of 'photograph' of the adjustment status.

- The submenu "AILDIFF": The differential flap provides a different travel up and down the rudder fin. The differential is very useful on high-wing trainer and gliders to eliminate adverse yaw. This is a rotation around a vertical axis that passes through the center of gravity. In general, the nose of the aircraft drifted to the outside of the turn. The effect of yaw may also alter certain tricks like the barrels. To solve the differential go to the "Settings" menu then under "AILDIFF". Connect the aileron channel 1 and 2 in the fin 2 in lane 7. Activate ACT) and specify the values of deflections using the + and -. To adjust the values of left you push the aileron stick left and hold while adjusting. Save the setting by briefly pressing the MENU.



The differential flap provides a different travel up and down the rudder fin.

- The submenu "Airbrake" function Airbrake (spoiler) activates the brake on an aircraft aerodynamics by increasing its drag. It combines the ailerons and flaps to lower and / or regulate the speed of flight. You must connect the ailerons being 1 and 7 and / or flaps in lane 6.

To resolve Airbrakes go to the "Settings" menu then under "Airbrake. Activate 'ACT' and then specify values for 2 aileron deflections and / or components with the '+' and '-'. We can also adjust the compensation depth, its delay and the method: manual (the Inter) or not. Save the setting by briefly pressing MENU. Connect the components in Y to track 6. It is the inter F. Mod position 1 which controls the onset of Airbrakes.



AIR BRAKES function enables the aerodynamic braking on an airplane, lower or control its flight speed or increase its lift.

- The submenu "VTAIL" VTAIL function allows mixing depth and direction on models whose tail is in V (as some gliders).



VTAIL function allows mixing depth and direction on models whose tail is in V.

- The sub menu "PROG-MIX": Seven mixes are available on our TGY9x. They are generally used to bond two channels together. The second channel is the slave of the first (master) on condition that a position of Inter. Despite indications from the screen "PROG-MIX", only the main channels (Aileron, direction, depth. Gas) can act as the Master. I am not able to use the flap as master to assign an auxiliary channel as a slave in order to use 2 different routes for components for example.



7 mixes available on our TGY9x.

- The submenu "AILVATOR" function AIL Vator, also called differential depth allows to use 2 different servos animate the elevator when the latter is composed of two distinct parts. This gives a better control of the roll axis.



AIL vator function, also called differential depth, can use 2 different servos animate the elevator.

- The submenu "AUX-CH" auxiliaries can be set on channels 5 through 8 / 9. They are programmed for certain functions which only one interested in the electric flight: "GEAR". The landing gear is controlled by the same name Inter (front top right). You must define its path (5-9) in advance.



auxiliaries can be defined on channels 5 through 8 / 9.



7 - Conclusions, For or Against : For an incredibly low price, Turnigy offers us an excellent radio: solid, reliable, convenient and quite powerful enough. This is an excellent choice to start with electric foamer. I used TGY9X 3 months before writing this article without the slightest incident noted transmission or any failure in flight. The device is compact and well in hand (but unbalanced on the neck strap). The inter arranged in the manner of Futaba, are accessible. But they are very average quality of the game and some have handles orders, adjustable hardness, are quite sensitive with a pretty good return to neutral. They also fail to feel the quality of those provided by most major brands, but are perfectly usable and more than enough for typical use (not competition). Overall, the manufacturing quality has nothing to envy to the radio 3 times the price.

Even if the LCD screen and navigation keys belong to the previous generation radios (graphic summary, no dial ..), they are perfectly integrated into the case. One can only regret that much of the main screen is used to display information without any real interest (Turnigy power system). Note that the plastic that covers the LCD screen is of very poor quality and easily mocked, even if he lends more attention (there is still no screen protector).





The plastic screen is very fragile. The logic is to discuss various navigation keys, the main screen is cluttered with little useful information.

The software is fairly intuitive and easy to use but it could still win comfortably with an allocation of logical functions of the control buttons. In some cases the keys are not used consistently. For example in the subroutine "E. POINT" which adjusts the limits of the deflections, the '+' reduces the setting values, the key '-' the increases. If you push the handle on the right is the left value is set ... The programming power is very satisfactory and widely enough to steal foamer or small electric glider (I have tested the functions helicopter) ..

The receivers are sold at a very low price. They are reliable and easy to 'bind' but they are bulky. There is no receiver or even 4-way 6 lanes in the range Turnigy. This problem can be circumvented by using receivers Turborix or installing a module ASSAN.

The TGY 9x can use a transmitter battery type 3S lipo. Autonomy becomes very important but there is not really suitable. The low battery alarm is not set for lipo batteries (detection limit). You need to watch (on screen) the battery voltage and prevent it drops below 3v per cell (9v). Take a safety margin because the labor market tightness is not very accurate. On the other hand, the charger's internal TGY 9x is not suitable for lipo. You are **therefore** obliged to leave the transmitter lipo battery to recharge it on a charger for this purpose.

Although there are still some minor bugs to fix and improve quality control (see create ..), the TGY 9x is reliable transmission. It offers, for a nominal price, a service far superior to that of Radio 3 or 4 times more expensive. She has no competition.

Finally, note that the TGY9x not current French standards that impose a limitation of power on the top of the 2.4Ghz band. Maximum power is 100 mW in the band 2400-2483.5 MHz for indoor flights. For flights outside the limitation is 100 mW in the band 2400-2454 MHz and 10 mW in the band 2454 to 2483.5 MHz. These measures reduce the distance issue and should disappear in 2012 (?).

I summarized in the table below, the advantages and disadvantages of this radio. The list of 'cons' long and severe, must be tempered by taking into account the price of the unit.

The craze for this issuer stimulate the imagination of many models. Thanks to them, it is now possible to install an alternative firmware on TGY9x. It is to replace its software with a more mature program developed by users (the principle of open source). It is a remarkable contribution, but reserved only for skilled modellers on pain of 'breaking' the beautiful radio! It requires a USB programmer and a good level of soldering. For more information see [the firmware, alternative](#) .

Value for money ever!

To

- Value for money outstanding.
- 2.4Ghz Receivers prices incredibly low.
- Pretty good design, good ergonomics and grip.
- Manufacturing quality good enough.
- Pairing (binding) receptors very simple.
- Fairly intuitive navigation.
- PCM + PPM coding.
- 8 model memory, copy.

Cons

- There are still some bugs (1).
- Plastic housing.
- Supplied without transmitter battery and charger.
- Delivered without neck strap.
- No manual 'paper', or French.
- LCD display: easy to read.
- LCD graphics to very rough.
- The plastic covering the screen is of poor quality and are easily mocked (2).

- Sleeves adjustable hardness.
- Programming power very well.
- Transmitter compatible with transmission module ASSAN.
- Trainer function with a simple 3.5mm jack.
- Perfect for electric foamer.
- Good reliability of the transmission part.
- No incidents in flight.
- Possibility of installing an alternative firmware.
- No quick navigation key (mouse wheel).
- Switches with average quality of the game on some.
- No ERASE function to delete a model.
- 2.4Ghz receivers are bulky and somewhat heavy.
- Firmware, flashed, no upgrade possible via internet.
- No external memory (SD card, EPROM ..).
- For the guarantee you should send it in china (!).
- The main screen is mismanaged.
- The spatial position of some buttons do not always match their actions.
- Disrupts WiFi connections (live box 2.4).
- No free channel assignment.
- Stopwatch only on an inter (not on gas so no stroke).
- Unable to use auxiliary freely.
- Mixes with limited function in the main master.
- Inter Inverted Trainer (3).
- Radio poorly balanced with the battery (4).
- The module is connected to the transmitter by a wire (5).
- Lack of precision in measuring the battery voltage issue.
- No setting the threshold for low battery alarm (6).
- Low battery alarm is not suitable for lipo battery.

- (1) It's very embarrassing and it can be bypassed.
 (2) no screen protector.
 (3) it is sufficient to disassemble the case and unsolder wire for welding on the other terminal of the cross.
 (4) there may activate the gas by mistake, you should use a balancer to deport the attachment of the neck strap.
 (5) must make a change in the connector to install another module.
 (6) attention to 3S lipo that you must manage yourself.



8 - Reports of incidents and bugs .

The main problems I have found myself or who have been reported by modelers nice. These incident reports can have a broader picture of potential anomalies. These are essentially problems observed in the power and minor bugs.

- You turn the switch ON and nothing happens. Reported a case with battery operation. A pod was crimped directly onto a wire power lead. Simply strip the wire and solder.
- Message 'ERROR SWITCH' on power up. This means that one (or several) on a cross is forbidden to start position. This is often the 'THR Hold / F Mode' it is enough to change positions. In some cases you should switch all international top position back. In other cases we must also put all the faders to '0 '. If it works yet, look what international officials are changing their positions one by one.
- The LCD is awry. During the first commissioning of the TGY 9x, a surprise awaited me. The main screen was arranged through and some of the information was hidden. This may

sound strange but there's nothing very serious. The screen was improperly positioned during the assembly of the transmitter or shifted during transport. Just open the box (the back), is replaced in its cradle and add 2 points of glue. The operation takes only a few minutes but, beyond this anecdote, one can legitimately ask whether there is a quality control material for the Turnigy (actually Flysky)?



The main screen was arranged through and some of the information was hidden ..

- Bugs: I found some bugs on version 2 firmware. Overall there is nothing dramatic that prevents flying.
 - Default display setting values when the cursor is on the changed value.
 - Impossible to change the way radio in certain conditions.
 - Some defects backup after amendment, you must try several times.



9 - General warning on the 2.4 Ghz . A 2.4 GHz transmitter is it dangerous for our health? It is very difficult to answer this question with certainty so the opinions are divergent on this issue that concerns us. In general it is safe in studies conducted by the lobby of electronics. It's more dangerous in the studies conducted by independent laboratories. The problem of our 2.4 GHz transmitters is the same as the equipment using the 2.4 Ghz as the wifi, the frequencies of mobile phones (0.9 GHz to 2.1 GHz) and microwave ovens (2, 45 GHz). These frequencies are all vibrate the water molecule which forms the bulk of the human body (70%).

Waiting for clear and objective information, it seems important to apply the precautionary principle. Unless one is exposed and better. Regarding the model, a 2.4 Ghz radio broadcasts in France bought in 10mV on a portion of the spectrum (small) and 100mv on the rest. A designer who made 2 or 3 flights each 10mm plain the we should not risk much. The problem is certainly more worrying if you're flying in a confined room or many remote controls emit at the same time.


10 - Links tgy9x 🚩 3 result (s)


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