FrSky Stabilized Receivers, S8R and Archer SR10+

For some time now, at least since FrSky decided to stop production on the popular S6R and S8R receivers, I have been looking for a suitable replacement. These receivers worked extremely well for those looking for a 6 or 8 channel receiver with 3 axis gyro stabilization at a reasonable cost.

For what ever reason, without getting into the politics of FrSky retail thoughts, they stopped production of these receivers and did not offer a replacement. The closest version of this receiver, the Archer series, only worked with their ACCESS protocol therefore of no use to us, looking for ACCST protocol receivers. Maybe there intent was to steer the sales of Radios to there Access and Ethos protocols and capitalize on the market. I believe after realizing they may have lost a good market share and in an effort to correct this issue, they updated the firmware on the Archers series receivers to bind in both protocols. Hurray, we finally have a replacement, NOT SO QUICK.

If you have ever used these receivers, either the S series or the Archer series, you know there is a Calibration and Configuration set up that must be done before you can use the receivers. This set up is also dependent on the way, airplane, aircraft you wish to use the receivers in. With that said, how do you calibrate and configure the receiver. If you own a FrSky radio, you have there support and programming scripts to allow these functions. If you own something else, OpenTX or EdgeTX you rely on Lua Scripts to perform the task. But wait, the Lua Scripts are not created by the Edge TX team, but on the other hand created by the receiver manufacture. See where I am going with this, correct, FrSky stopped supporting the Lua Scripts that are needed to operate on OpenTX and EdgeTX systems. Again, in my humble opinion, they made another move to capitalize on the sales.

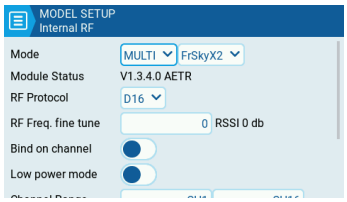
After much research and discussions with other EdgeTX radio users, we all agreed that this put us in a very confusing and frustrating position if we needed to use the Archer series receivers. As I have heard, the market was searched and depleted of all the S Series receivers that some could find. I personally had one left, and it was already dedicated to an aircraft. I already had purchased three of the Archer Series 10 Plus with stabilization. Two of them went into my 35% Extra 260, SBus connected to a RB 30 redundant bus module. I did not need the Stabilization feature of these receivers for the Extra, so no frustration there.

Recently I was asked to build a FMS Integral by one of our club members. He brought me the Box containing the jet, an Archer S Series 10 Plus Receiver, and a Voltage Sensing module for added telemetry. Now, this equipment is all too familiar to those of you flying EDF jets, under the command of a Radio Master Tx16S radio. The difference is we use the S8R receivers and the system operated flawlessly. The challenge now was to figure out a way to use the Archer Plus Stabilized receiver in this Jet.

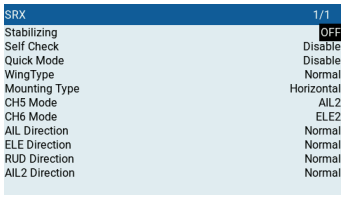
The jet went together well, and I can say I am impressed with the 80mm Integral. FMS paid attention to detail, built a strong fuselage and made it easy to attached the wings, horizontal stabilizer and tail. All the servos are preinstalled and the linkages all supplies. Much like the Freewing Avanti that some of you are familiar with, the build was easy. Until I came to the receiver. This is when the all hell broke loose and the frustration began.

At the FrSky web site, I downloaded the most recent firmware and Lua Scripts that were available for the equipment we were about to use. I flashed the firmware to the receiver and installed the Lua Scripts on the Radio, TX16S,

Following most protocols, I first made sure the receiver had the most recent firmware. From the FrSky web site, I downloaded and flash this firmware. Firmware version - V3.0.1, dated 2024-12-20. I also downloaded and installed the latest Lua Scipts on my Radio Master TX16S,
Lua Scripts version - AP_SRx_Lua_v2.04

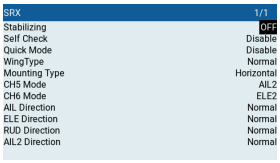


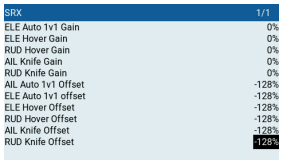
Now, these receivers are capable of dual protocol operation of which one is ACCST D16. This is the protocol I needed for the radio I was using. The binding process was easy and went well. With the bind complete, I had control of the receiver and tested by moving servos on each channel. At this point the receiver is not installed in the airplane.



Next is the configuration and calibration process. With the Lua scripts installed on the radio, and the receiver bound, I was off to the races so they say. I opened the configuration script to ensure the stabilization function was enabled, and it was. So off to the calibration script. This is a process where you run the Lua Script, put the receiver in a number of positions according to the instructions so that the gyro knows what is up, down, left, right, you get the picture. This process went well.

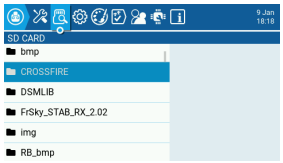
Next step is the configuration. This is the process were you tell the receiver what type of airplane, receiver installation orientation, etc. Your can set the gains for each gyro position, Pitch, Roll, Yaw etc. This is were the wheels full off the bus so to say. Nothing I tried seem to work. I could change the settings to what I wanted, then exit the script. When I went back to check, none of the settings were saved. Frustration - so after multiple attempts at the configuration, I sent out an SOS to guys I know have knowledge about these receivers. Much to my surprise, they all answered back with the same statement. “I am as frustrated as you are.”

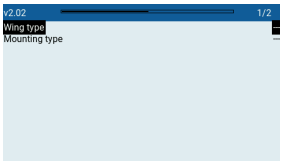




If you are familiar with this process and the Lua Scripts you will spot something is not right in these photos. In photo 2, I changed the CH5 and CH6 channels to Aux 1 and Aux 2, but when I shut down the receiver and restarted it, re-ran the Lua Script, you can see in photo 4 the changes are not saved. Also note the values in picture 3 are not what is expected. Bummer.

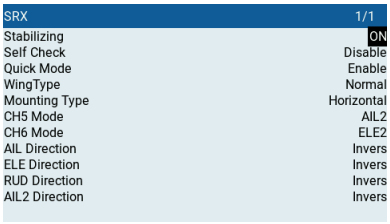
So those of you who know me, will understand that I could not give up on this task and just let it be. After a good nights sleep, and fresh eyes, I started to examine the options. More research, which led me nowhere. Then I remembered, there was a different firmware and Lua scripts available. So I searched out and found the following. Firmware Version - V1.0.10, dated 2024-01-09. Lua Scripts version - FrSky_STAB_RX_2.02. So with this thought in mind and the files downloaded, I began my testing. I flashed the receiver with the V1.0.10 version of the firmware, and installed the FrSky_STAB_RX_2.02 Lua Scripts in the radio. With all the firmware and files in the correct place, I bound the receiver to my radio and so the experiment begins. As you can see in the pictures below, no joy.

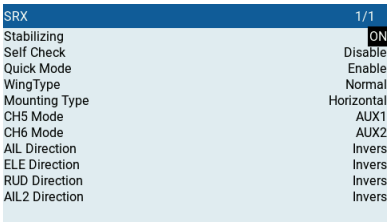


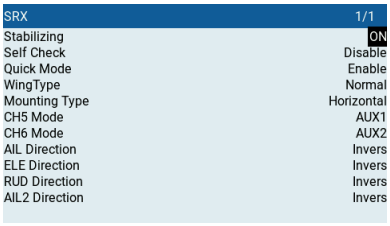


You guessed it, following the steps above, I was able to calibrate the receiver, and enter the configuration script. I was unable to successfully communicate with the receiver and make the necessary changes I needed and exited the script. UGH.

So I thought, why not run the new Lua Script, V2.04 on the receiver with the older firmware. Much to my surprise and liking, all went well and, yes, the settings I changed, were saved in the receiver, making it operational for my needs.







Lua Script 2.04 looking good in picture 1. Picture 2 shows the changes I made to CH5 and CH6. Picture 3 shows values of stabilization that are default and correct. Picture 4 shows the changes made were saved when I shut down the receiver and restarted it. YEA.

I installed the receiver in the plane, connected the servos and the voltage telemetry module and began testing. I successfully set up the servo travel both under manual control and stabilization control. I did need to run the script again and reverse the aileron and elevator stabilization directions. This is not uncommon, usually somewhat normal to have to do. It is very important to check control surface travel in manual mode and in stabilization mode. The last check was the self leveling, somewhat similar to safe mode for you Spectrum guys, and it worked as well.

In conclusion, I know that many of you have been searching for a replacement for the ever popular FrSky S8R receiver. In my humble opinion and according to my testing, we now have an option, the FrSky Archer S10+.

Did I stumble across a fix for this ever frustrating situation, or find an issue that FrSky did not want found. Hope you enjoyed this article and maybe learned something.

Yesterday, we took the airplane to the field, verified the control surfaces under radio control, and under stabilization control. All looked good. We flew the aircraft, maiden flight, some trimming required. The aircraft flew very well, the stabilizer provided the expected corrections and wind rejection control. Very pleased, we landed and put things away. It was the end of the day and time to go home.

Cheers for now, Jim (Torch) Anderson.