

Changing a JR MC19 transmitter from 35MHz to 2.4GHz with ASSAN

This is an experience report to change my JR (Graupner) transmitter to 2.4GHz transmission using a transmitter plug in module for JR MX22.

The company ASSAN provides transmitter plug in modules to be used in handheld transmitters.

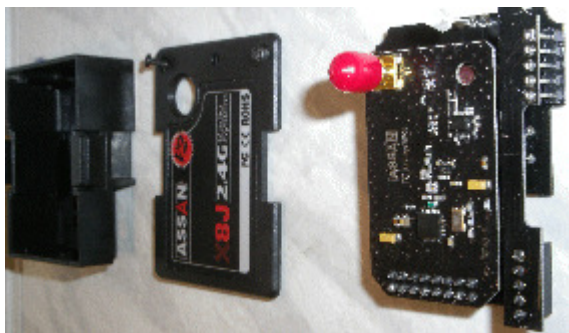
During all the following operation be aware that you are working with sensitive electronic components which can be damaged by electrostatic discharge. Prevent your tools from getting charged by taking the following precautions:

- Do not wear synthetic clothes
- Use soldering tools with insulating transformers

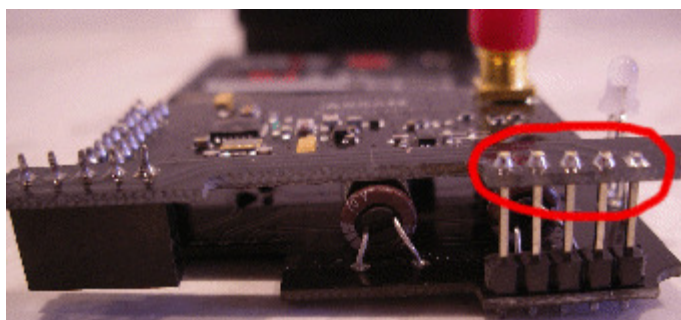


Unfortunately my MC19 (similar to MC22) does not support plug in transmitter modules so it became essential to change the ASSAN transmitter module's outer shape, create an adapter cable to ensure proper connection to the transmitter's computer board and to fix the module properly into the transmitter's housing without major changes.

First of all the module has to be opened by unscrewing the two screws as to identify in the right side of the picture above. Now the transmitter circuit board can be taken out of the plastic cover. As a result you will get this:



In the right of the transmitter board you can see the adapter which fits to the JR transmitters just like the MX 22 and MC24.



For the further use in the MC19 (MC22 too) the plug adapter board – marked with a red line in the next picture – is no longer needed. It can be unsoldered.

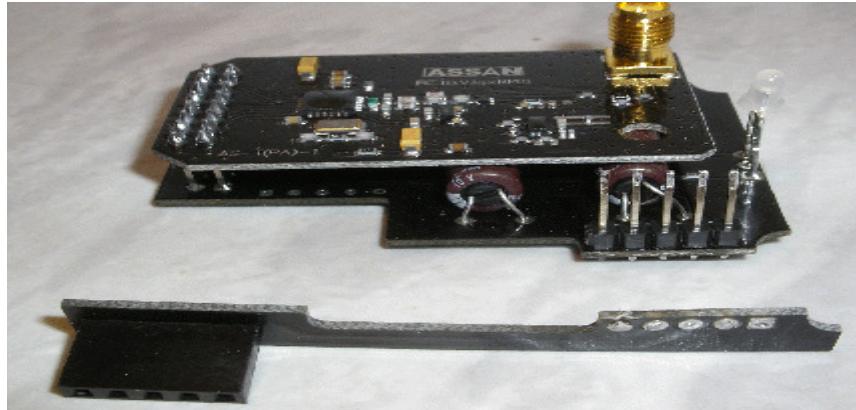
But take care you do not overheat the transmitter board because it can be damaged and also take care that you do

not apply excessive force to the circuit boards and the plug that has to remain at the main board.

This is the result →

Now the pins of the remaining plug must be cleaned carefully from the tin in order to use them for the new connection.

The adapter board in the lower part of this picture is no longer needed. You can dispose it.



This 5 pin plug has the following pin assignment beginning from the left:

- Pin 1 control pulse
- Pin 2 not used
- Pin 3 positive voltage
- Pin 4 negative voltage
- Pin 5 not used

Now an adapter cable must be made to connect the transmitter to the computer control board. For the transmitter side a female 5 pole connector (4 poles are sufficient as well) is to be used. This plug must have pin spacing of 2.5mm (1/10 of an inch is possible as well because of the little number of pins in use).

For the transmitter side, a JST- plug with 2mm pin spacing must be used. If such a plug is not available, an unsoldered plug from the former transmitter circuit board can be re-used.



At the plug for the transmitter end it must be connected to the cable as shown in the left of the picture above. The “lower” pin of this plug remains unused for the new application.

Now the ASSAN transmitter board can be fitted into the transmitter. Between transmitter hull and ASSAN transmitter board a thin layer (2...3mm) of sponge rubber should be placed. This protects the transmitter circuit board from damage. The antenna socket and the indicator LED will fit to the existing hole in the front of the transmitter. The “legs” of the LED must be bended a little to fit exactly. The use of one of the former hole- fillers is recommended to ensure the LED’s safe fit.

Use a nut and a washer to secure the antenna plug in the transmitters front. If such nut and washer is not available try to get one where you get material for wireless LAS. The nuts and washers used in WLAN- application fits well to the antenna plug at the ASSAN module.

As the result your MC19 / MC22 can look like my transmitter:



In case you own a MC 15 or similar, this method of adaption will fit as well.

But keep in your mind:

- You are responsible for the correct operation of your transmitter
- This is a change which is not supported by the transmitters manufacturer or distributor
- You will take the full legal responsibility in case of damage/injury to you or other person
- After binding a receiver – refer to ASSAN manual – perform a range test.
- Only if you are sure that the reconfiguration was successful and the transmitter works within allowed parameters join your friends at the flight field.

One last hint:

Don not used JR and FUTABA devices in a mixed configuration. This can cause receiver latching and you will loose your model! For sure!

Only use:

ASSAN J with JR transmitter and

ASSAN F with FUTABA transmitter

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