MPLS4/DSM Mod for ER9X

A simple guide for the rest of us!

Date: 20 July 2010 | Author: Rob Thomson

About this guide

This guide has been put together to assist those who would like to enable DSM2 support on their ER9X based radios; by salvaging the DSM2 transmitter module from one of the cheap game pad style controllers that are shipped with the Spektrum BNF aircraft.

This mod is not particularly difficult. Simple follow the instructions and you should be ok.

Shopping List

The following list highlights the key items you will require, prior to starting your conversion. You do not need to purchase these from the suppliers listed. The links are simply provided to give you a start in the right direction.

Er9x radio
http://www.hobbyking.com/hobbyking/store/__8992__Turnigy_9X_9Ch_Transmitter_w_Module_8ch_Receiver_Mode_2_v2_Firmware_.html

MPLS4DSM Based Transmitter
http://www.ebay.co.uk/sch/i.html?_from=R40&_trksid=p5197.m570.l1313&_nkw=PKZ3341&_sacat=See-All-Categories

1N4001 Diode
http://www.ebay.co.uk/sch/i.html?_from=R40&_trksid=p5197.m570.l1313&_nkw=1n4001+diode&_sacat=See-All-Categories

470K Resistor
http://www.ebay.co.uk/sch/i.html?_nkw=470K+resistor&_sacat=0&_dmpt=UK_BOI_Electrical_Components_Supplies_ET&_odkw=1n4001+diode&_osacat=0&_trksid=p3286.c0.m270.l1313

Step 1

First thing you need to do is to salvage the DSM2 module from the old transmitter.

This is easily done. Open up the old transmitter (4 screws) and unsolder the transmitter module from the main board. The module looks very similar to the picture below – and should be easy to spot as it has the antenna attached to it! If you cant find it – give up now :-)

Now is a good time to take note of the red annotations on the image below.   You will be soldering up to three terminals. Signal, Gnd, 3.3V
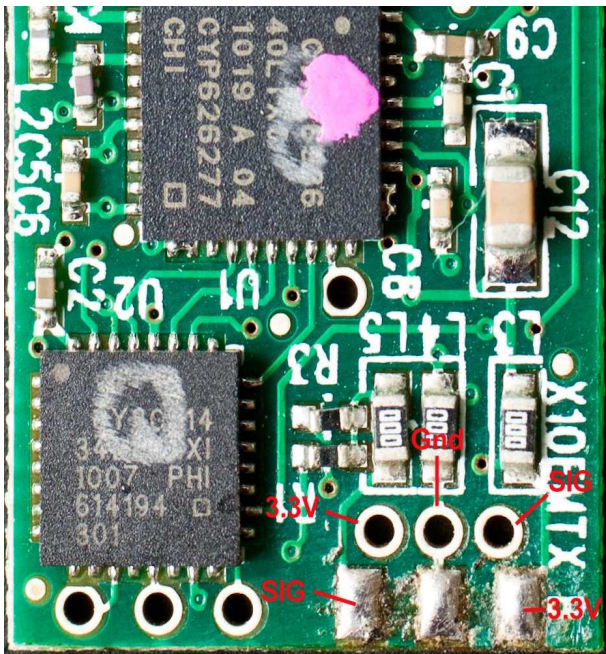
Step 2

Time to install a resistor. This is really easy! Simply solder a resistor (470K) from the SIG pin to the 3.3V pin. Thats right. All we are doing is a link between the pins. If it is easier, you could easily take 3 wires from the terminals on the module; and wire the resister in at the end of the wires! Main thing is to link SIG & 3.3V with the resistor.
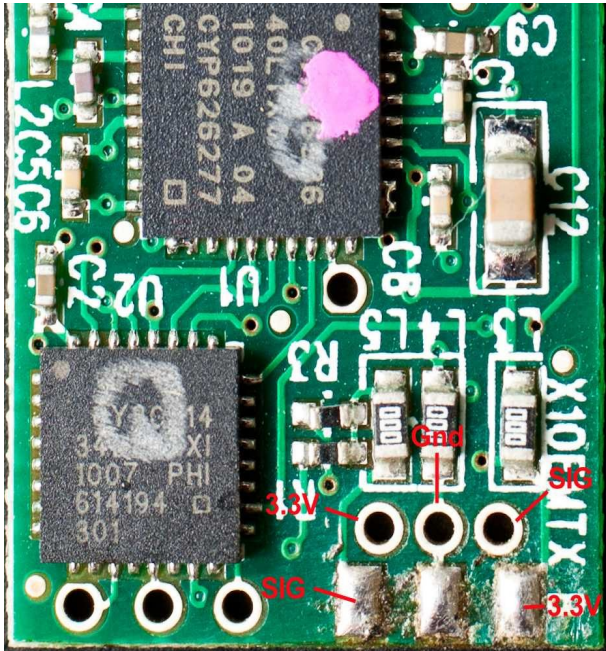
Step 3

Time to install a diode. This diode needs to be soldered to the pin marked SIG. Diodes must be soldered in the correct direction. Make sure you solder the side **without the stripe** to the SIG pin on the module.
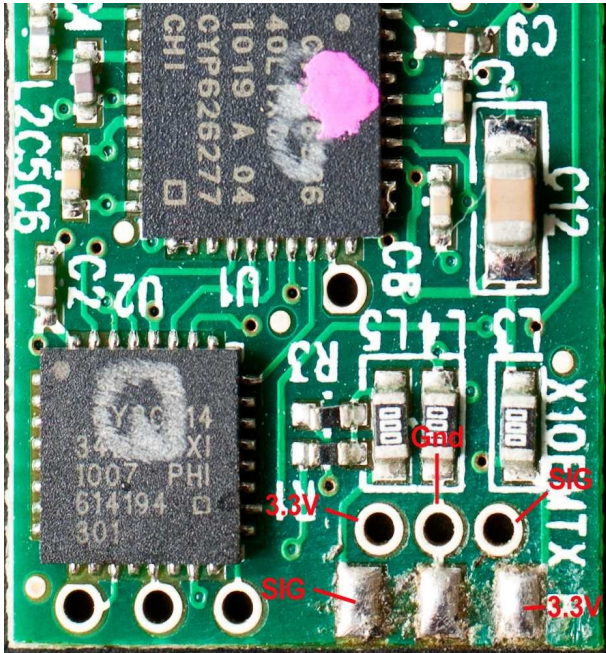
Step 4

We are nearly there. We need to power the module with a 3.3V power source.

Fortunately the TH9 board has a usefull 3.3V outlet. This is shown in the image below.   The GREY wire in the center of the image is connected to the pad that gives 3.3V. Simply solder a wire to the pad on the main board – and solder the other end of it to the 3.3V pad on the module.
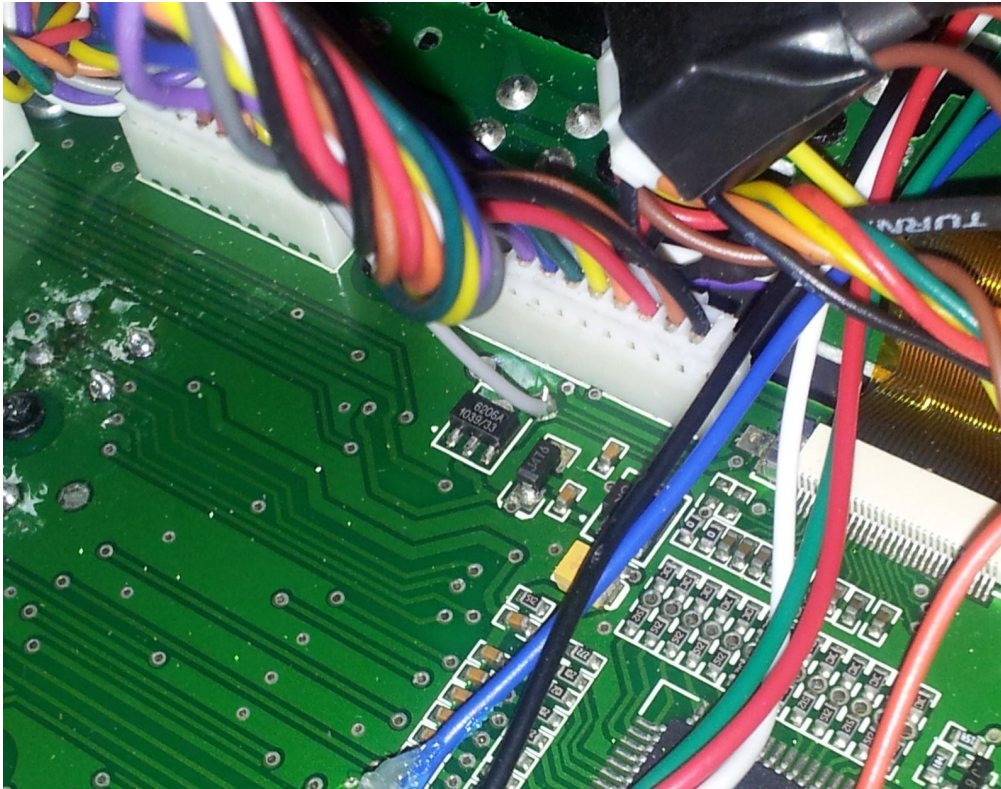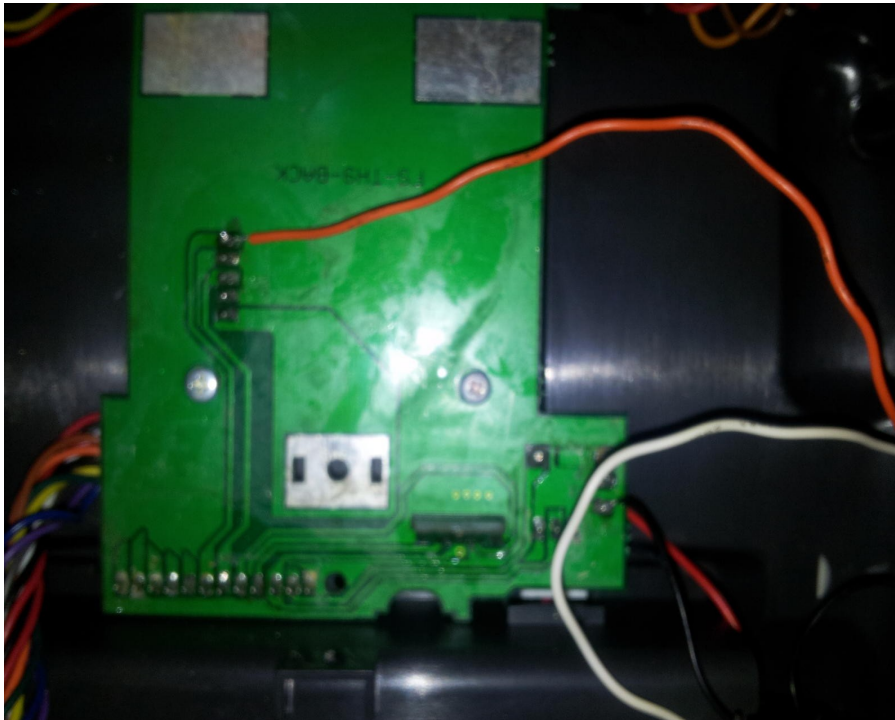
Step 5

Take a look at the image below. The orange wire is the PPM signal.

Simply solder a lead to the top pin; and solder the other end of the lead to the DIODE. (the one you attached to your module earlier!)

Step 6

The last job to do is to connect the modules GND pad to a suitable GND pad on the main board. In my case I soldered mine up to one of the big silver pads on the board below (top left and right). You could choose any GND point that suits – but those pads are easy to access :)
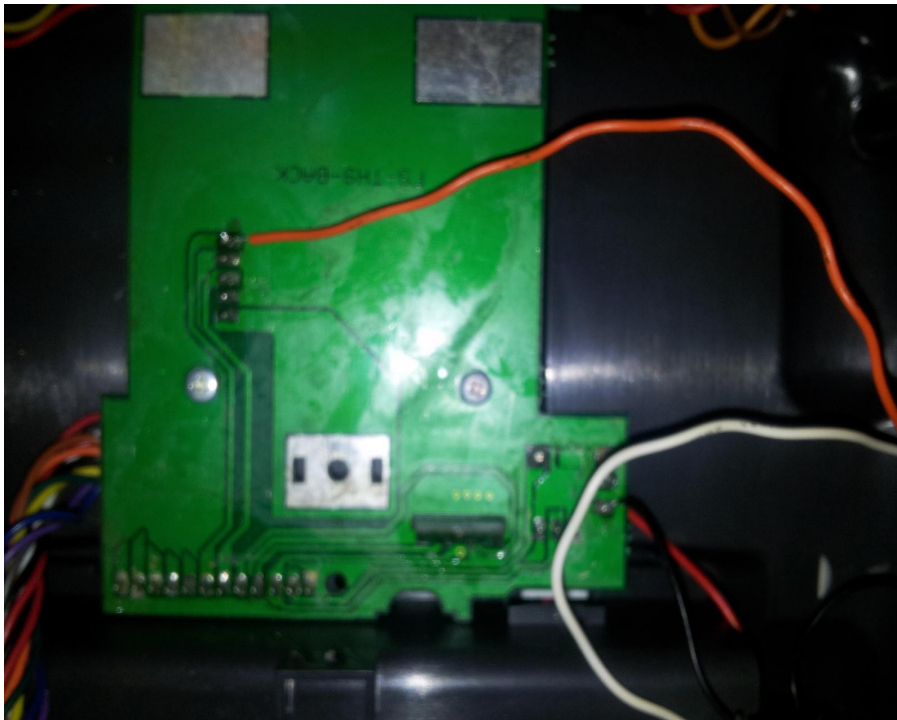
Step 7

You should now be in a good position to close up the TX and start binding!

Simply hot glue the module to the TX in a convenient location; install the antenna in a suitable location. (I actually hot glued mine on the inside of the case – and to date have had no range issues!) and screw the case back together.

Binding in ER9X is achieved by holding the TRAINER switch during power up of the TX. Remember. Hold it until the TX has powered up – then release.

Conclusion

I hope this guide has been informative and helped to explain the mod's in a non complex way.

I strongly encourage you to get involved with the community!

There is a very active thread on
http://www.rcgroups.com/forums/showthread.php?t=1266162

where you can get direct contact and help from the er9x developers. The team are always open to suggestions and very willing to help!

Should you have any questions regarding the conversion that are not covered in this guide, please get in touch with me on the rcgroups.com website. Simply PM: rob.thomson and you will find me!